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Strengthening the Colorado Educator Workforce Pipeline

Facilitating Geographic Information System (GIS) Map Exploration and Application

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I. Overview

Developed by the Region 12 Comprehensive Center in partnership with the Colorado Department of Education, this document and corresponding materials (see Table 1) support Colorado teams in exploring the geographic information system (GIS) map, facilitating conversations on the data presented in the map, and developing recommendations to strengthen Colorado's educator workforce pipeline.

Objectives

Participants will:

- » Understand how to use the GIS map.
- » Learn how to identify challenges and opportunities for strengthening the educator workforce pipeline using the map.
- » Develop data-based recommendations to strengthen the educator workforce pipeline.

Audience

The guidance and workbook is designed for teams of stakeholders, led by a facilitator, interested in strengthening the educator workforce pipeline—that is, how systems can better attract, prepare, and retain educators. It is recommended that teams are composed of diverse stakeholders and could include representatives from local education agencies, schools, educator preparation programs, and others who support the educator pipeline. The facilitator should be someone comfortable leading stakeholder engagement sessions and helping others to explore and use data.

Materials

Table 1 lists the recommended materials for teams to complete the GIS map exploration and application activities. Two facilitation options are described, in-person or virtual, depending on the desired delivery format.

Table 1. Materials Recommended for In–Person and Virtual Facilitation

In Person Facilitation	Virtual Facilitation
All resources linked below are also available at https://region12cc.org/gis-map-exploration-and-application-resources	
» Slide presentation (with talking points/ facilitation guidance in each slide note)	» Slide presentation (with talking points/ facilitation guidance in each slide note)
» Printed copy of section II. Facilitator's Guide	» Electronic copy of section II. Facilitator's Guide
» Printed copies of section III. Workbook (for participants)	» Electronic copy of section III. Workbook (for participants)
» Strengthening the Colorado Educator Workforce Pipeline GIS map	» Strengthening the Colorado Educator Workforce Pipeline GIS map
» Strengthening the Colorado Educator Workforce Pipeline GIS video	» Strengthening the Colorado Educator Workforce Pipeline GIS video
» Sticky notes in multiple colors	» Online sticky note tool (e.g., Google Jamboard, Padlet)
» Pens and markers	» Internet access
» Chart paper	» Computers or laptops for participants
» A computer, projector, and screen for the slide presentation	» Virtual meeting platform to accommodate expected number of participants for a 2- to 4-hour session (e.g., Zoom, Google, Teams)
» Internet access	» Ancillary materials:
» Computers or laptops for participants	▪ Addressing Educator Workforce Shortages: Colorado Bright Spots
» Ancillary materials:	▪ Addressing Educator Workforce Shortages: A State Comparison Brief
▪ Addressing Educator Workforce Shortages: Colorado Bright Spots	▪ Talent Development Framework: Improving Access to Excellent Educators for All Students
▪ Addressing Educator Workforce Shortages: A State Comparison Brief	
▪ Talent Development Framework: Improving Access to Excellent Educators for All Students	

II. Facilitator's Guide

This section provides facilitators with suggestions for structuring the data exploration and use session and notes on how to implement the suggested activities for both in-person and virtual sessions. The other core components include a workbook (see section III), slide presentation with talking points/facilitation guidance in each slide note, and GIS map. It is highly recommended that the facilitator thoroughly reviews these materials prior to facilitating a data analysis session.

Outline of Data Exploration and Application Session

Table 2 provides a detailed outline of the agenda for the data exploration and use session, including suggested timing for the activities, corresponding slide numbers, and materials needed. Additional time may need to be allotted for the activities depending on the team's familiarity with the content and the number of participants. The presentation and activities may be divided into two sessions and will take approximately 4 hours to complete.

Table 2. Detailed Outline of the Agenda

Agenda Item	Time	Slides	Materials Needed
Welcome and Introductions	10 minutes	1–9	» Slides
Introduction to the Strengthening the Colorado Educator Workforce Pipeline GIS Map	20 minutes	10–22	» Slides » GIS map » GIS video
1. Identify Key Findings Using the GIS Map	90 minutes	23–31	» Slides » GIS map » Workbook » Sticky notes and pens or online sticky note tool » Computers/laptops (virtual and in-person)
Break time, end of first session	10–20 minutes	32	
2. Develop Data Interpretations	60 minutes	33–38	» Slides » Sticky notes, pens, chart paper or online sticky note tool » Computers/laptops (virtual and in-person)
3. Create Recommendations	60 minutes	39–47	» Slides » Workbook » Sticky notes, pens, chart paper or online sticky note tool

Agenda Item	Time	Slides	Materials Needed
			» Computers or laptops (virtual and in-person) » Ancillary materials: ▪ Addressing Educator Workforce Shortages: Colorado Bright Spots ▪ Addressing Educator Workforce Shortages: A State Comparison Brief ▪ Talent Development Framework: Improving Access to Excellent Educators for All Students

Guidance for Activities

Welcome and Introductions (Slides 1 9)

Objective: Develop a sense of community among team members and share the purpose and goals of the data analysis session.

Overview of Engagement: Facilitator will welcome participants; facilitator and team members briefly introduce themselves. As an icebreaker activity, the facilitator will share a grid of pictures and ask participants to select which picture best illustrates how they feel when using data and why.

» **Virtual facilitation**: Participants can respond via a poll or the chat feature of the selected virtual meeting platform.

» **In-person facilitation**: Facilitator may call on individuals to respond to the question or administer a poll in-person.

The facilitator will review the agenda, objectives of the data analysis session, and any norms that have been agreed upon for discussion (update slide 8 accordingly).

Introduction to the Colorado Educator Workforce Pipeline GIS Map (Slides 10 22)

Objective: Participants develop an understanding of a GIS application, the importance of place-effects, and how to navigate the GIS map.

Overview of Engagement: Facilitator will introduce place effects, explain what GIS is, and how it can help in better understanding the Colorado educator workforce pipeline. The facilitator will introduce key terms for GIS applications such as points, lines, and polygons. The facilitator will explain how to navigate the Colorado GIS map.

Activity Implementation: Three options to facilitate this section of the data analysis session include the following:

- » Facilitator presents slides 10–22 and gives a tour of the GIS map to participants.
- » Facilitator plays the GIS video during the data analysis session, which covers the same content as the slides and includes a tour of the GIS map.
- » Facilitator assigns the GIS video for pre-work to participants prior to the session.

1. Identify Key Findings Using the GIS Map (Slides 23 31)

Objective: Participants understand a "data finding" and the process for developing findings, and can identify findings using the GIS map.

Overview of Engagement: Facilitator will provide an overview of what is a finding and how to identify findings within the GIS map. The facilitator will divide participants into small groups, and each group will explore at least two dashboards of the GIS map. In reviewing the GIS map for their section(s), each group will identify findings. The map exploration could focus on the entire state, a particular region relevant to the team, or a select district.

Activity Implementation: The facilitator will divide participants into small groups of approximately three to five participants. Each group will select three members to serve as a notetaker, reporter, and navigator, respectively. Assign each group at least two different dashboards from the GIS map depending on the size of the team. Groups will use the workbook section (see Tables 3–9) that aligns with their assigned dashboards. The workbook provides directions on how to navigate the map, including the specific filters to adjust in the map, and corresponding reflection questions for the teams to consider as they develop their findings. Participants will have a minimum of 60 minutes to explore the map and identify their findings. Below are steps for setting-up and facilitating this activity virtually or in-person.

Virtual Facilitation:

1. Create a [Google Jamboard](), [Padlet](), or use other online tool that will allow participants to write on virtual sticky notes. Teams will work from the same Jamboard or Padlet.

2. Instruct the navigator to share their screen showing the GIS map with the group and adjust the filters as they explore the map.

3. Direct teams to follow the workbook for guidance on the specific filters and questions to help explore the map. Teams will write their notes from exploring the data in the "Data Observations" column in the workbook. These observations will help to inform the findings.

4. Instruct the notetaker to write the group's findings on the virtual sticky notes. The notetaker will write the name of the dashboard at the top of the sticky note and the finding in the body.

5. Assign sticky note colors to different teams or dashboards if the online tool allows for it.

6. Send groups to different break-out rooms to explore the map and record their findings.

In-Person Facilitation:

1. When organizing the small group set-up, ensure that groups have space to engage in conversations without disrupting other groups.

2. Provide each group with different color sticky notes and pens. Each team will review the GIS map within their group on a shared computer or laptop.

3. Instruct the navigator to share the GIS map with the group and adjust the filters as they explore the map.

4. Direct teams to follow the workbook for guidance on the specific filters and questions to help explore the map. Teams will write their notes from exploring the data in the "Data Observations" column in the workbook. These observations will help to inform the findings.

5. Instruct the notetaker to record the group's findings on the sticky notes. Have them write the name of the dashboard at the top of the sticky note and the finding in the body.

6. After the groups finish identifying their findings, the facilitator will bring them back together. The reporters will share one finding per dashboard.

2. Develop Data Interpretations (Slides 33 38)

Objective: Participants develop data interpretations from the findings.

Overview of Engagement: The facilitator will provide an overview of how to create a data interpretation from the findings previously recorded.

Activity Implementation: The facilitator will convene the whole team to discuss the data findings and group them into themes. The findings could be grouped by topic, region/entity, role, or some other theme. This process will allow for participants to examine the findings across the different dashboards. Next, the facilitator will divide the team into groups again and assign one or two themes to each group. Below are steps for setting up and facilitating this activity in virtual or in-person settings.

Virtual Facilitation:

1. Move the findings around in Google Jamboard or the selected online tool into the themes suggested by the entire team.

2. Add headings or label the theme for each group of findings using either a text box in Jamboard or a column header in Padlet, for example.

3. After the findings are organized into the themes, divide participants into groups so each group will develop data interpretations for one or two sets of findings.

4. Instruct groups to assign a new notetaker who will record the data interpretations on sticky notes using a different color from the findings.

5. Direct the notetaker to write the header "Data Interpretation" at the top of the sticky note and the data interpretation text in the body. It is recommended that groups place the data interpretations next to the corresponding findings to help make necessary connections.

6. Send groups to different break-out rooms to develop data interpretations. Teams will document their data interpretations from the same Jamboard frame or Padlet wall.

In-Person Facilitation:

1. Instruct groups to organize their sticky note findings into themes.

2. Direct groups to write the each theme on a piece of chart paper and add the corresponding findings. Post the chart paper around the room.

3. Ask groups to walk around the room and review the themes and findings from the other teams.

4. Discuss with the whole team whether any themes should be combined or findings moved to a new theme or duplicated to be included in multiple themes. Update the chart paper theme titles and findings during this discussion.

5. Divide participants into groups and assign one or two themes per group. Give each group the assigned theme's chart paper with the sticky notes.

6. Instruct groups to develop data interpretations based on the findings on the chart paper.

7. Request groups assign a new notetaker to write the data interpretations in the first column in Table 10 in the workbook.

3. Create Recommendations (Slides 39 47)

Objective: Participants develop data-based recommendations.

Overview of Engagement: The facilitator will review how to develop recommendations based on the findings and data interpretations.

Activity Implementation: The facilitator will maintain the same groups that created the data interpretations to develop recommendations. Each group will document their recommendations in Table 10 of the workbook. Below are steps for setting up and facilitating this activity in virtual or in-person settings.

Virtual Facilitation:

1. Instruct groups to select a notetaker who will write the recommendations in Table 10 in the workbook and a reporter who will share out the recommendations to the larger team.

2. Direct groups to create recommendation(s) for each data interpretation, determine who should enact this recommendation, and the timeline. The notetaker will document this in the workbook.

3. Send groups to different break-out rooms to discuss and develop their recommendations.

4. Bring groups back together to the main room.

5. Give the reporter from each group permission to share their computer screen.

6. Request the reporter display their workbook while sharing the recommendations their team developed.

7. After each group presentation, ask whether the other groups have any additional recommendations or feedback to provide.

8. Instruct the reporter to document any feedback in their workbook.

9. Ask all reporters to share via email or cloud-based file storage their final workbooks with the facilitator.

10. After the session, combine the recommendations from the teams together into one copy of Table 10 from the workbook.

11. After the session, share with the team the final Table 10 from the workbook.

In-Person Facilitation:

1. Instruct groups to select a notetaker who will write the recommendations in Table 10 in the workbook and a reporter who will share out to the larger team the recommendations.

2. Direct groups to create recommendation(s) for each data interpretation, determine who should enact this recommendation, and the timeline. The notetaker will document this in the workbook.

3. After groups develop their recommendation(s), bring the groups back together.

4. Each reporter will present their group's recommendations.

5. After each group presentation, ask whether the other groups have any additional recommendations or feedback to provide.

6. Instruct the reporter to document any feedback in their workbook.

7. Ask all reporters to hand-in their final workbooks to the facilitator.

8. After the session, combine the recommendations from the teams together into one copy of Table 10 from the workbook.

9. After the session, share with the team the final Table 10 from the workbook.

Additional Resources: To help the team write recommendations of evidence-based strategies, the facilitator may provide ancillary materials for the team to reference. The following resources outline strategies from a national perspective and Colorado contexts:

» Addressing Educator Workforce Shortages: Colorado Bright Spots

» Addressing Educator Workforce Shortages: A State Comparison Brief

» Talent Development Framework: Improving Access to Excellent Educators for All Students

III. Workbook

Introduction

This section is designed to help Colorado teams navigate the Strengthening the Colorado Educator Workforce Pipeline Geographic Information System (GIS) Map and reflect on the data displayed. The workbook has two sections, each with corresponding tables: (1) Identifying Key Findings Using the GIS Map and (2) Creating Recommendations. The first section provides guidance for exploring the GIS map and identifying findings using the map. The second section provides space for teams to capture their recommendations based on their findings and data interpretations, including next steps.

Identifying Key Findings Using the GIS Map

Tables 3–9 are organized around each essential question and dashboard in the Colorado GIS map. As teams explore each dashboard, the tables offer step-by-step instructions for how to navigate the map and document findings of challenges and opportunities (i.e., "Data Observations" column). These include filters that can be turned on and off in the GIS map to facilitate consideration of different perspectives (e.g., district vs. principal vs. teacher) and different demographics, and provide opportunities to "zoom" in on specific areas. The tables also include reflection questions for teams to consider and space in the final column of each table labeled "Data Observations," to record their discussion.

The purpose of this section of the workbook is to help guide teams through the GIS map and facilitate discussion. It is not intended to limit a team's exploration of the map and recording of observations. Teams are encouraged to ask their own unique questions of the map and identify findings.

Creating Recommendations

In Table 10, teams can document their data interpretations, meaning(s) derived from their data findings (Tables 3–9), with corresponding recommendations and next steps. Recommendations should focus on possible policies, practices, or strategies that will address what is described in the data interpretations. Additionally, recommendations could emphasize a priority area, a specific strategy to implement, or other research and data needed to address the interpretation(s). Next, teams can identify who will be responsible for enacting each recommendation. The responsible party could be a specific individual(s) and/or entities ("Who" column). Finally, teams can consider a desired timeline for implementing the recommendation(s) ("When" column). This could include categorizing recommendations by those accomplishable in the short- and long-term or adding specific time periods to complete them.

Workbook Tables

Table 3. Educator Mobility/Attrition: What are the status and longitudinal patterns of educator mobility/attrition in districts and schools?

Navigating the Map	Questions to Consider	Data Observations
Teacher		
Select the District-Level Mobility/Attrition Rate "on," the School-Level Teacher Mobility/Attrition Rate "off," and "Teacher" as the educator type from the drop-down menu.	» Which districts have the highest and lowest teacher mobility/attrition rates? » Are there any trends to note of the districts with the highest or lowest teacher mobility/attrition rates?	
Adjust the Students of Color slider bar.	» Do the districts with the highest mobility/attrition rates serve a lesser or greater percentage of students of color?	

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Navigating the Map	Questions to Consider	Data Observations
Turn "off" the District-Level view and turn "on" the School-Level view.	» Which schools have the highest and lowest teacher mobility/attrition rates? » Are there any trends in the types of schools with higher or lower teacher mobility/attrition rates (e.g., elementary school vs. middle school)?	
Turn "on" both the District-Level view and School-Level view.	» Are there districts with clusters of schools with high teacher mobility/attrition rates? » Are there any districts with a mixture of some schools with low and some with high mobility/attrition rates? ▪ Are these schools in the same districts that were identified as having a high teacher mobility/attrition rate?	
Adjust the Students of Color slider bar.	» Do schools with the highest teacher mobility/attrition rate serve a lesser or greater percentage of students of color?	

Navigating the Map	Questions to Consider	Data Observations
Teacher (5-Year Difference)		
Select the District-Level Mobility/Attrition Rate "on," the School-Level Teacher Mobility/Attrition Rate "off," and "Teacher (5-Year Difference)" from the drop-down menu.	» Which districts have the greatest trend of increasing or decreasing their 5-year teacher mobility/attrition rate? » Are there any trends when comparing these districts to those districts with the highest or lowest teacher mobility/attrition rate for the most recent school year of data?	
Adjust the Students of Color slider bar.	» Do the districts with the trend of increasing teacher mobility/attrition rates over 5 years serve a lesser or greater percentage of students of color?	

Navigating the Map	Questions to Consider	Data Observations
Turn "off" the District-Level view and turn "on" the School-Level view.	» Which schools have the greatest trend of increasing or decreasing their 5-year teacher mobility/attrition rate? ▪ Are there any trends when comparing these schools with those schools with the highest or lowest teacher mobility/attrition rate for the most recent school year of data? » Are there any similarities in the types of schools with a trend of increasing or decreasing their 5-year teacher mobility attrition rate (e.g., elementary school vs. middle school)?	
Turn "on" both the District-Level view and School-Level view.	» Are there districts with clusters of schools with a trend of increasing their 5-year teacher mobility/attrition rate?	

Navigating the Map	Questions to Consider	Data Observations
Adjust the Students of Color slider bar.	» Do schools with the trend of increasing teacher mobility/attrition rate over 5 years serve a lesser or greater percentage of students of color?	
Special Service Provider (SSP)		
Select the District-Level Mobility/Attrition Rate "on," the School-Level Teacher Mobility/Attrition Rate "off," and "Special Service Provider (SSP)" as the educator type from the drop-down menu.	» Which districts have the highest and lowest SSP mobility/attrition rates? » Are there any trends to note of the districts with the highest or lowest SSP mobility/attrition rates? » Are there any parallels to districts with high teacher and/or principal mobility/ attrition rates?	
Adjust the Students of Color slider bar.	» Do the districts with the highest SSP mobility/attrition rates serve a lesser or greater percentage of students of color?	

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Navigating the Map	Questions to Consider	Data Observations
Turn "off" "the District-Level view and turn "on" the School-Level view.	» Which schools have the lowest and highest SSP mobility/attrition rates? » Are there any parallels with the mobility/attrition rates of teachers and/or principals for these schools?	
Turn "on" both the District-Level view and School-Level view.	» Are there districts with clusters of schools with high SSP mobility/attrition rates? » Are there any districts with a mixture of some schools with low and high SSP mobility/attrition rates?	
Adjust the Students of Color slider bar.	» Do schools with the highest SSP mobility/attrition rates serve a lesser or greater percentage of students of color?	

Navigating the Map	Questions to Consider	Data Observations
Principal		
Select the District-Level Mobility/Attrition Rate "on," the School-Level Teacher Mobility/Attrition Rate "off," and "Principal" as the educator type from the drop-down menu.	» Which districts have the highest and lowest principal mobility/attrition rates? » Are there any trends to note of the districts with the highest or lowest principal mobility/attrition rates? » Are there any parallels with the principal mobility/attrition rates to teacher mobility/attrition rates?	
Adjust the Students of Color slider bar.	» Do the districts with the highest principal mobility/attrition rates serve a lesser or greater percentage of students of color?	
Turn "off" the District-Level view and turn "on" the School-Level view.	» Which schools have the lowest and highest principal mobility/attrition rates? » Are there any parallels with the principal mobility/attrition rates with teachers for these schools?	

Navigating the Map	Questions to Consider	Data Observations
Turn "on" both the District-Level view and School-Level view.	» Are there districts with clusters of schools with high principal mobility/attrition rates? » Are there any districts with a mixture of some schools with low and some with high principal mobility/attrition rates?	
Adjust the Students of Color slider bar.	» Do schools with the highest principal mobility/attrition rates serve a lesser or greater percentage of students of color?	

Table 4. Labor Market: What is the relationship between hard-to-fill positions and labor market trends?

Navigating the Map	Questions to Consider	Data Observations
Select "District-Level Unfilled Positions."	» Which districts have the greatest unfilled positions? ▪ Are there any trends across those districts?	
Select an endorsement area from the drop-down menu (e.g., English Language Arts, Mathematics, Special Education Generalist).	» Which endorsement area(s) have the most unfilled positions? » Are there any trends in the districts that have unfilled positions for the endorsement area(s) with the most shortages?	
Select "District-Level Shortage Mechanisms Used."	» Which districts have the highest percentage of positions filled via a shortage mechanism? ▪ Are there any trends among those districts?	

Navigating the Map	Questions to Consider	Data Observations
Select a shortage mechanism type from the drop-down menu (e.g., Long-Term Subs).	» Which shortage mechanism do districts use the most? » Which districts utilize each shortage mechanism the most? » Are there trends across districts for each type of shortage mechanism used? » Which shortage mechanism is used the most in the districts identified as having the highest percentage of positions filled via a shortage mechanism?	
Adjust the Unfilled Positions (per 100 students) slider bar.	» Which districts, if any, have higher unfilled positions who also use a greater number of shortage mechanisms? » Are there any trends in districts that have both a high rate of unfilled positions and high utilization of shortage mechanisms?	

Navigating the Map	Questions to Consider	Data Observations

Return the "Unfilled Positions" slider bar to cover the full range. Adjust the "Median Household Income," the "Average Teacher Salary," the "Unemployment Rate (% of civilians 16 years and older not in the labor force)," and the "Student Teacher Ratio" slider bars one at a time.	» Which districts have a low or high median household income?
	    ▪ Are there any trends compared to the districts identified with high unfilled positions or teacher mobility/attrition rates?
	
	» Which districts have a low or high average teacher salary?
	    ▪ Are there any trends compared to the districts identified with high unfilled positions or teacher mobility/attrition rates?
	
	» Which districts have a low or high unemployment rate?
	    ▪ Are there any trends compared to the districts identified with high unfilled positions or mobility/ attrition rates?
	
	» Which districts have a low or high student teacher ratio?
	    ▪ Are there any trends compared to the districts identified with high unfilled positions or teacher mobility/attrition rates?	

Table 5. Incentive Programs: How are teacher incentive programs related to district mobility/attrition and ability to fill open positions?

Navigating the Map	Questions to Consider	Data Observations
One at a time, select each incentive type in the "Incentives" drop-down menu (i.e., "Total Incentives," "Quality Teacher Recruitment Grant," "All other incentives") and review the map.	» Which districts employ the most teachers who have received a stipend or program? 　▪ Are there any trends across the districts for total incentives? » Which districts employ the most teachers who have received a Quality Teacher Recruitment Grant? 　▪ Are there any trends compared with "All incentives"? » Which districts have received the most "All other incentives"? 　▪ Are there any trends compared with "All incentives"?	
Adjust the Teacher Mobility/Attrition Rate (per 100 students) slider bar for each incentive type in the drop-down menu.	» Do the districts with the highest teacher mobility/attrition rates employ the teachers who receive the most total incentives, most Quality Teacher Recruitment Grants, and/or most other incentives?	

Navigating the Map	Questions to Consider	Data Observations
Select the "Unfilled Positions" option. One at a time, select each type of incentive from the drop-down menu while adjusting the Unfilled Positions (per 100 students) slider bar.	» Do the districts with the highest percentage of unfilled positions employ teachers who receive the most overall stipends, most Quality Teacher Recruitment Grants, and/or most other incentives?	

Table 6. Teacher Supply: What is the relationship between the location of preparation programs and district hiring needs?

Navigating the Map	Questions to Consider	Data Observations
Educator Preparation Program (EPP) Endorsement Area		
Select the "EPP Endorsement Area" tab. Select "All" as the "Endorsement Area" in the drop-down menu and the "Unfilled Positions (#)" option.	» Are there nearby EPPs to supply teachers to those districts with more unfilled positions? ▪ Do those EPPs have many graduates?	

Select any interested endorsement area(s) from the drop-down menu (e.g., English Language Arts, Mathematics, Special Education Generalist).	» For each endorsement area of interest:
	  ▪ Are there nearby EPPs to supply teachers to the districts with unfilled positions in the selected endorsement area?
	  ▪ Are there any districts without a nearby EPP to supply teachers in the selected endorsement area?	

Navigating the Map	Questions to Consider	Data Observations
Adjust the # Unfilled Positions (per 100 Students) slider bar starting with all endorsement areas.	» Do the districts with the greatest percentage of unfilled positions lack nearby EPPs?	
EPP to Districts		
Select the "EPP to Districts" tab. Select "All" from the District New Hires by EPP drop-down menu and review the map. Then, select any EPP(s) of interest from the drop-down menu.	» Do the districts with the greatest number of new hires have nearby EPPs? » Which districts hire the most graduates from the EPP(s) of interest? ▪ Are there any nearby districts that have not hired graduates from the EPP(s) of interest?	
Adjust the Unfilled Positions per 100 Students slider bar while viewing "All" from the drop-down menu and review the map. Then, select any EPP(s) of interest from the drop-down menu.	» Are new hires going to districts with the highest percentage of unfilled positions? » Are there particular EPPs who are supplying teachers to districts with unfilled positions?	

Table 7. District/School Performance: What is the relationship between district/school performance rating and teacher mobility/attrition?

Navigating the Map	Questions to Consider	Data Observations
Select the "District" option for School/District Performance and Teacher Mobility/Attrition.	» Are there any trends related to district performance ratings and teacher mobility/attrition rates (e.g., geographic)?	
Select the Performance Indicator checkboxes for "Accredited with Priority Improvement Plan" and "Accredited with Turnaround Plan."	» Are there any trends related to districts with a priority improvement or turnaround plan?	
Adjust each slider bar [i.e., Students of Color, Eligible for Free or Reduced-Price Lunch, Teacher Mobility/Attrition Rate (per 100 students)].	» Do the districts on a priority improvement or turnaround plan have higher teacher mobility/attrition rates? » Do the districts on a priority improvement or turnaround plan with high teacher mobility/attrition rates also serve a greater percentage of students of color or students eligible for free or reduced-price lunch?	

Navigating the Map	Questions to Consider	Data Observations
Select the "School" view option for School/District Performance and Teacher Mobility/Attrition.	» Are there any geographic trends related to school performance ratings?	
Select the checkboxes for "Accredited with Priority Improvement Plan" and Accredited with Turnaround Plan."	» Are there any trends related to schools with a priority improvement or turnaround plan? ▪ Are these schools located in the districts previously identified on priority improvement or turnaround plans?	
Adjust each slider bar [i.e., Students of Color, Eligible for Free or Reduced-Price Lunch, Teacher Mobility/Attrition Rate (per 100 students)].	» Do the schools on a priority improvement or turnaround plan have higher teacher mobility/attrition rates? » Do the schools on a priority improvement or turnaround plan and that have a higher teacher mobility/attrition rate also serve a greater percentage of students of color and/or students eligible for free or reduced-price lunch?	

Table 8. Student Populations: What is the relationship between districts/schools with high at–risk student populations and teacher mobility/attrition?

Navigating the Map	Questions to Consider	Data Observations
Select the "District" option from the District or School-Level section and "African American" from the Student Population drop-down menu and review the map. Then, adjust the Teacher Mobility/Attrition Rate (per 100 students) slider bar. Select each option in the drop-down menu for Student Population and adjust the slider bar for each population group.	» Do districts that serve a higher percentage of African American students have higher teacher mobility/attrition rates? » Do districts that serve a higher percentage of Latinx students have higher teacher mobility/attrition rates? » Do districts that serve a higher percentage of students receiving free or reduced-price lunch have higher teacher mobility/attrition rates? » Do districts that serve a higher percentage of special education students have higher teacher mobility/attrition rates? » Do districts that serve a higher percentage of English learner students have higher teacher mobility/attrition rates? » Are there any trends across the districts and student populations?	

Navigating the Map	Questions to Consider	Data Observations
Select the "School" option from the District or School-Level section and "African American" from the Student Population drop-down menu and review the map. Then, adjust the Teacher Mobility/Attrition Rate (per 100 students) slider bar. Select each option in the drop-down menu for Student Population and adjust the slider bar for each population group.	» Do schools that serve a higher percentage of African American students have higher teacher mobility/attrition rates? » Do schools that serve a higher percentage of Latinx students have higher teacher mobility/attrition rates? » Do schools that serve a higher percentage of students receiving free or reduced-priced lunch have higher teacher mobility/attrition rates? » Do schools that serve a higher percentage of special education students have higher teacher mobility/attrition rates? » Do schools that serve a higher percentage of English language students have higher teacher mobility/attrition rates? » Are there any trends across the schools and student populations? » Are there any trends when comparing school and district results?	

Table 9. Working Conditions: What is the relationship between working conditions and teacher mobility/attrition?

Navigating the Map	Questions to Consider	Data Observations
Select the "Overall" option for the School-Level Teaching & Learning Conditions Colorado (TLCC) Scores and adjust the Teacher Mobility/Attrition Rate (per 100 students) slider bar. Adjust the Overall Score slider bar to focus on higher and lower scores.	» Do the schools with higher teacher mobility/attrition rates have lower overall survey scores? » Do the schools with higher overall survey scores have lower teacher mobility/attrition rates? ▪ Are there any trends across these schools (e.g., geographic)?	

Select the "Leadership" option and adjust the Teacher Mobility/Attrition Rate (per 100 students) slider bar. Adjust the Leadership Score slider bar to focus on the higher and lower scores.	» Do schools with higher mobility/attrition rates have lower leadership survey scores?
	» Do schools with higher leadership survey scores have lower teacher mobility/attrition rates?
	  ▪ Are there any trends across these schools?
	  ▪ How do they compare with the overall scores?	

Table 10. Data Interpretations, Recommendations, and Next Steps

Data Interpretation	Recommendation	Who *(which individual(s) and/or entities will be responsible for enacting this recommendation)*	When *(the timeframe for implementing this recommendation)*

Data Interpretation	Recommendation	Who (which individual(s) and/or entities will be responsible for enacting this recommendation)	When (the timeframe for implementing this recommendation)