To and Through: Community and Technical Colleges in South Seattle and South King County

By the Community Center for Education Results
Supporting the Road Map Project

October 2018

PRESENTATION OVERVIEW

01 Project context

02 Postsecondary enrollment of Road Map high school graduates

03 Analysis of 2012 Road Map CTC cohort
- Cohort demographics
- Persistence and completion rates
- Indicators of student success
- Predictors of on-time completion

04 Recommendations for system leaders

05 Open questions and next steps

SECTION 01

01 **Project context**

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The Road Map Project is a *collective impact* initiative that began in 2010 to improve student achievement from cradle through college and career in seven King County school districts: Auburn, Federal Way, Highline, Kent, Renton, (South) Seattle, and Tukwila.

This research attempts to answer **six questions...**

01 *How many Road Map high school graduates enroll directly in college? Where do they enroll?*

02 *Who are Road Map high school graduates that enroll directly in local CTCs?*

03 *How many CTC students persist to year two? How many complete or transfer within three years?*

04 *To what extent is our system supporting Road Map students to reach key indicators of student success at community and technical colleges?*

05 *What are the strongest predictors of on-time credential completion?*

The Road Map Project is focused on increasing credential attainment and closing opportunity gaps

By 2020...

increase equitable policies and practices in our education systems and dramatically improve outcomes for children and youth, from cradle through college and career

By 2030...

eliminate the opportunity and achievement gaps impacting students of color and low-income children in South King County and South Seattle, and **70 percent of the region's youth will earn a college degree or career credential.**

CCER provides reliable information and support for practice improvement

01 Provide information that can help illuminate current realities and identify "bright spots" worth investigation

02 Partner with local colleges and other partners to support improvement efforts

Examples

- *Community and Technical College Report*
- *Analysis for individual colleges based on local questions*

- *Puget Sound Coalition for College and Career Readiness/PSCCN*
- *King County Promise (in development)*
- *Partnerships with individual colleges (in development)*

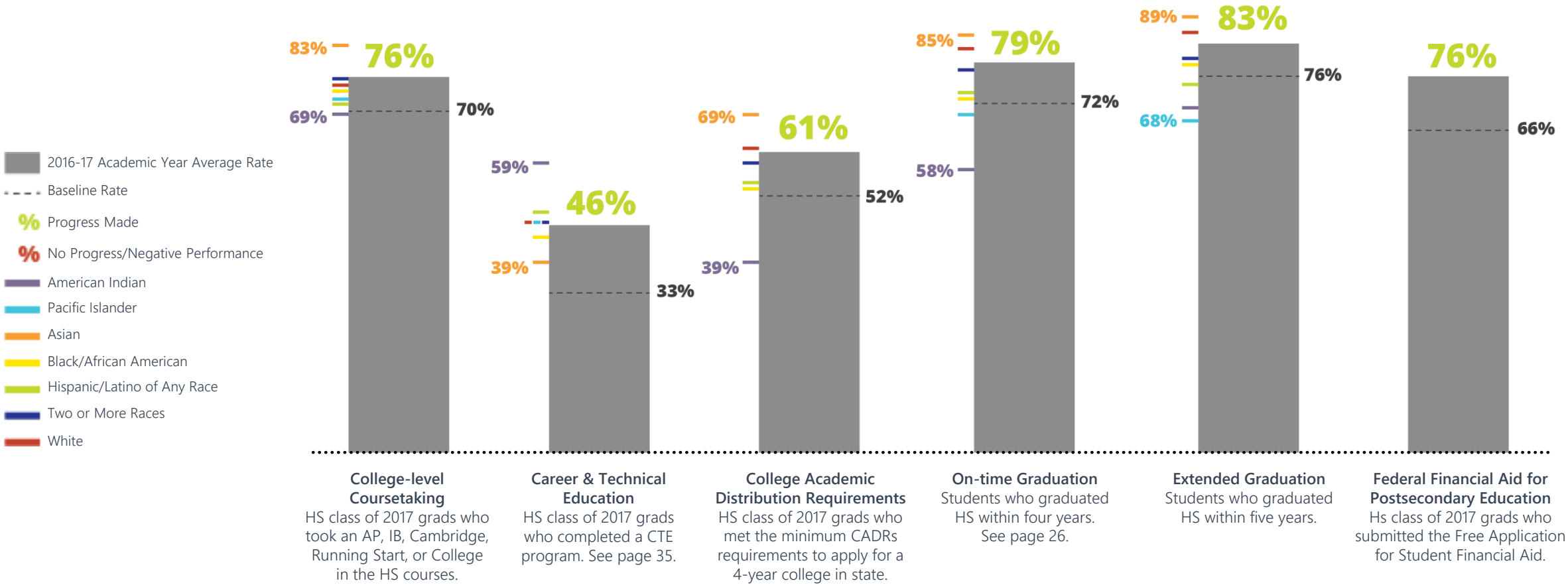
roadmapproject.org/resources/results-report-2017/

The Road Map Project Annual *Results Report* tracks region wide progress against indicators of student success along the educational continuum.

While there is still work to do,

college readiness is a "bright spot" in the Road Map region...

▸ *Coursetaking & High School Graduation*



College-level Coursetaking
HS class of 2017 grads who took an AP, IB, Cambridge, Running Start, or College in the HS courses.

Career & Technical Education
HS class of 2017 grads who completed a CTE program. See page 35.

College Academic Distribution Requirements
HS class of 2017 grads who met the minimum CADRs requirements to apply for a 4-year college in state.

On-time Graduation
Students who graduated HS within four years. See page 26.

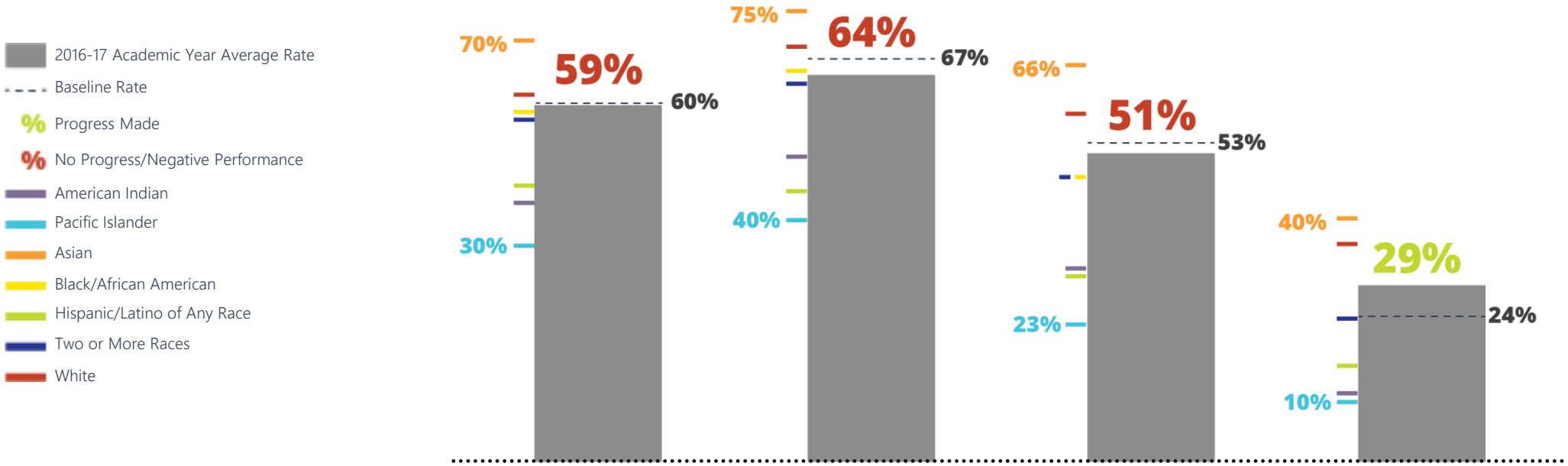
Extended Graduation
Students who graduated HS within five years.

Federal Financial Aid for Postsecondary Education
Hs class of 2017 grads who submitted the Free Application for Student Financial Aid.

Sources: The BERC Group; National Student Clearinghouse (NSC) and OSPI CEDARS student-level data via ERDC; OSPI Report Card Data Files; U.S. Department of Education: Federal Student Aid Office. Prepared by CCER Data & Research Team

...but college enrollment, persistence and completion trends remain low

- ***College Enrollment & Success Measures***



College Direct Enrollment
HS class of 2016 grads who enrolled in college one year after graduating HS.
See page 26

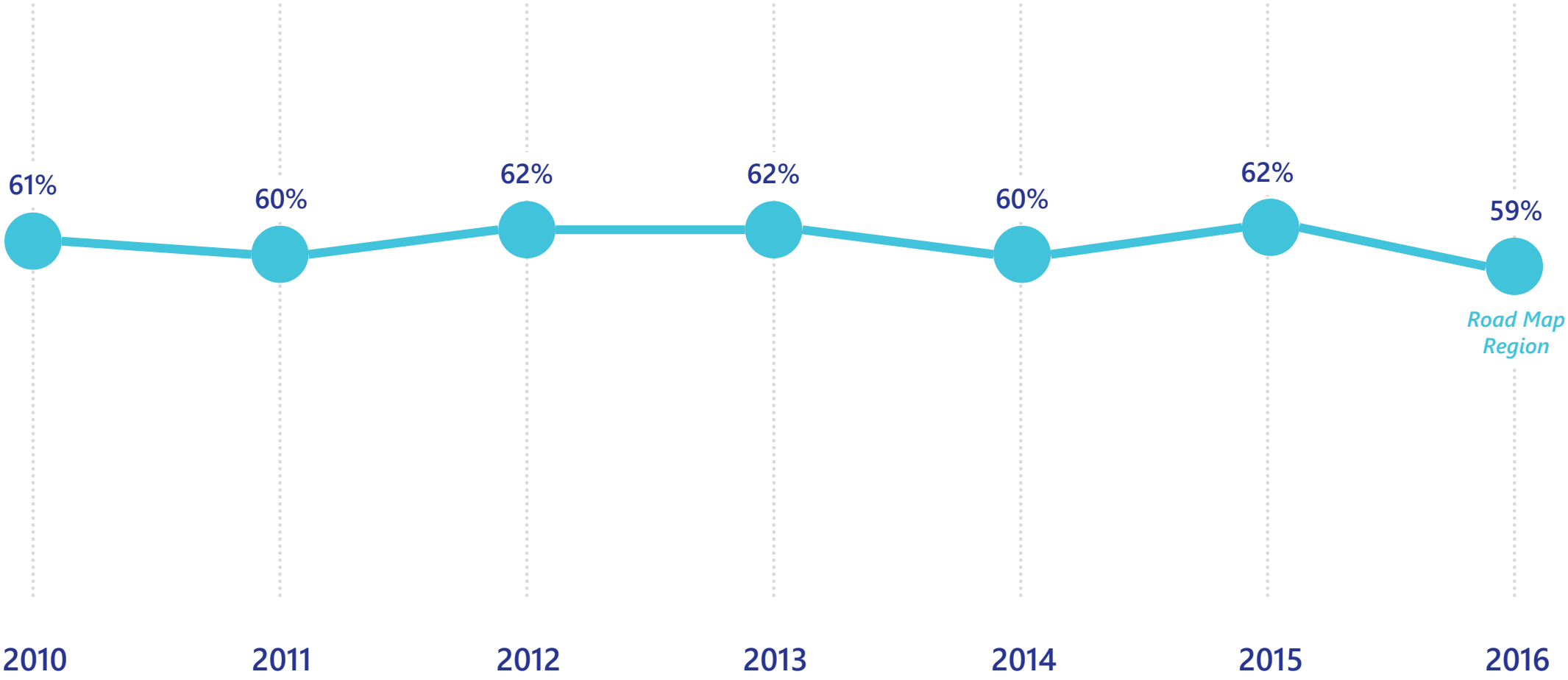
Every Enrolled in College
9th graders in 2008 who ever enrolled in a 2- or 4-year college by the end of the 2016-17 academic year

College Persistence
9th graders in 2008 who ever persisted to a 2nd year at a 2- or 4-years college by the end of the 2016-17 academic year.

Degree Attainment
9th graders in 2008 who earned a 2- or 4-year college credential, or degree by the end of the 2016-17 academic year.

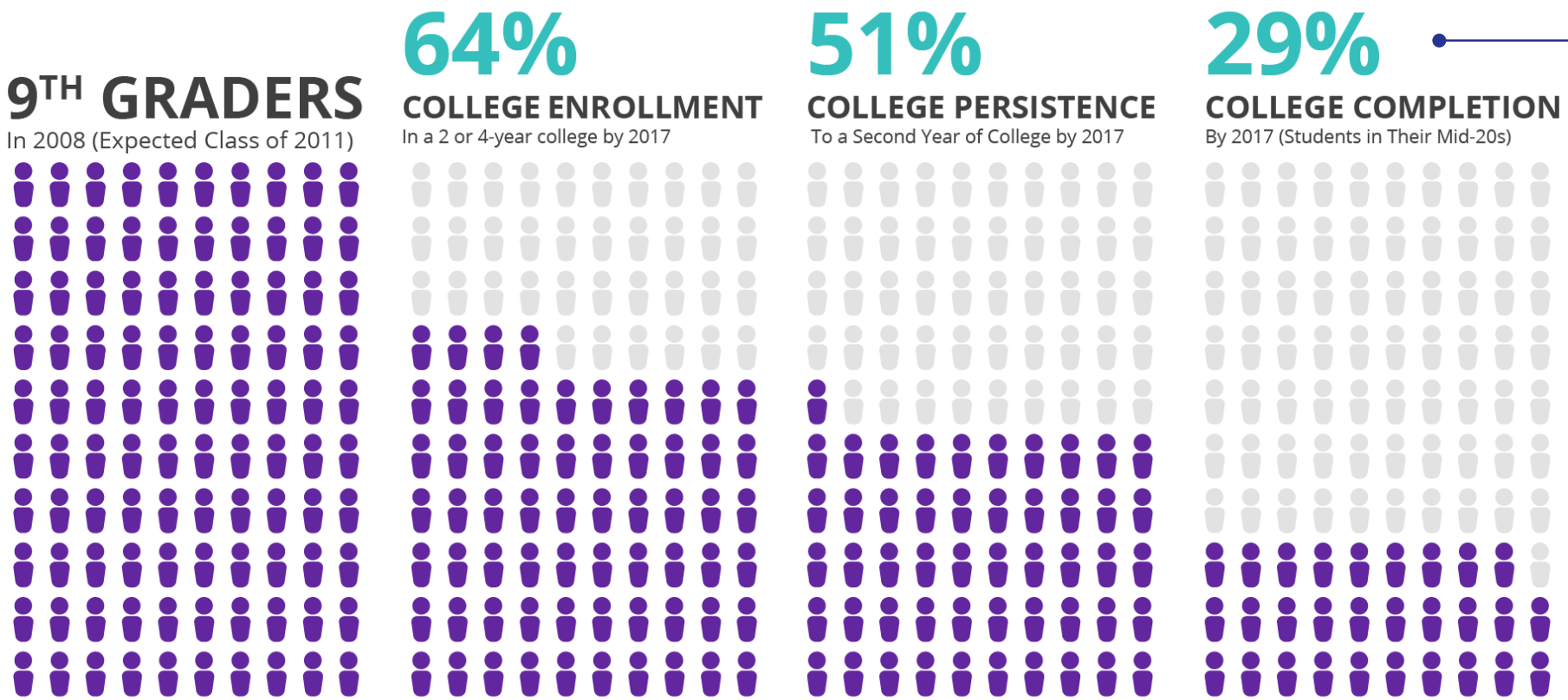
Source. CCER education data warehouse: OSPI CEDARS and NSC student-level via ERDC

Rates of direct college enrollment have remained relatively flat since the beginning of the Road Map project



Sources. CCER education data warehouse: OSPI CEDARS student-level data via ERDC; National Student Clearinghouse (NSC) via ERDC.

What more can we do to address the "leaky pipeline"?



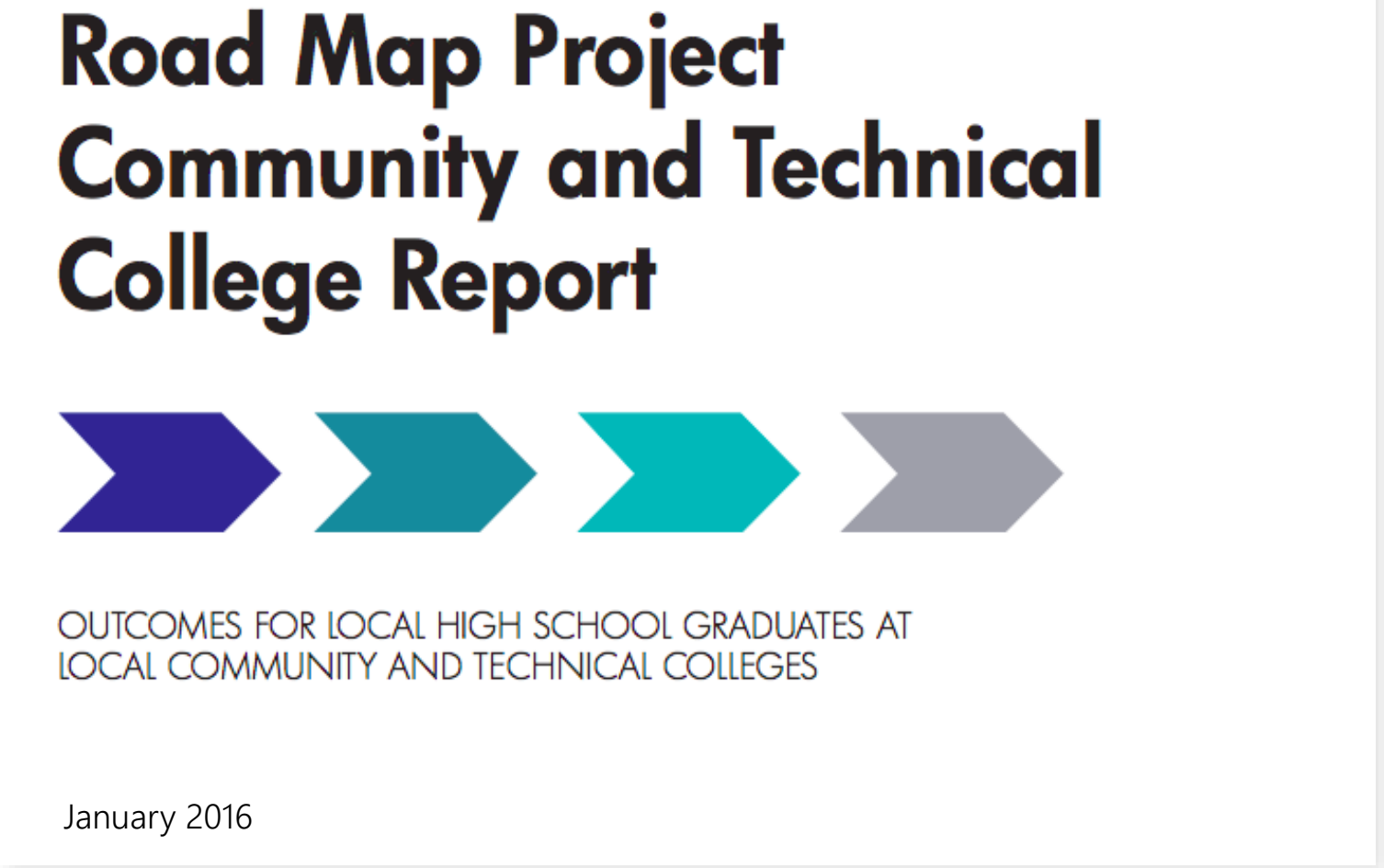
Black students: **19%**

Latinx students: **16%**

American Indian/
Alaskan Native: **11%**

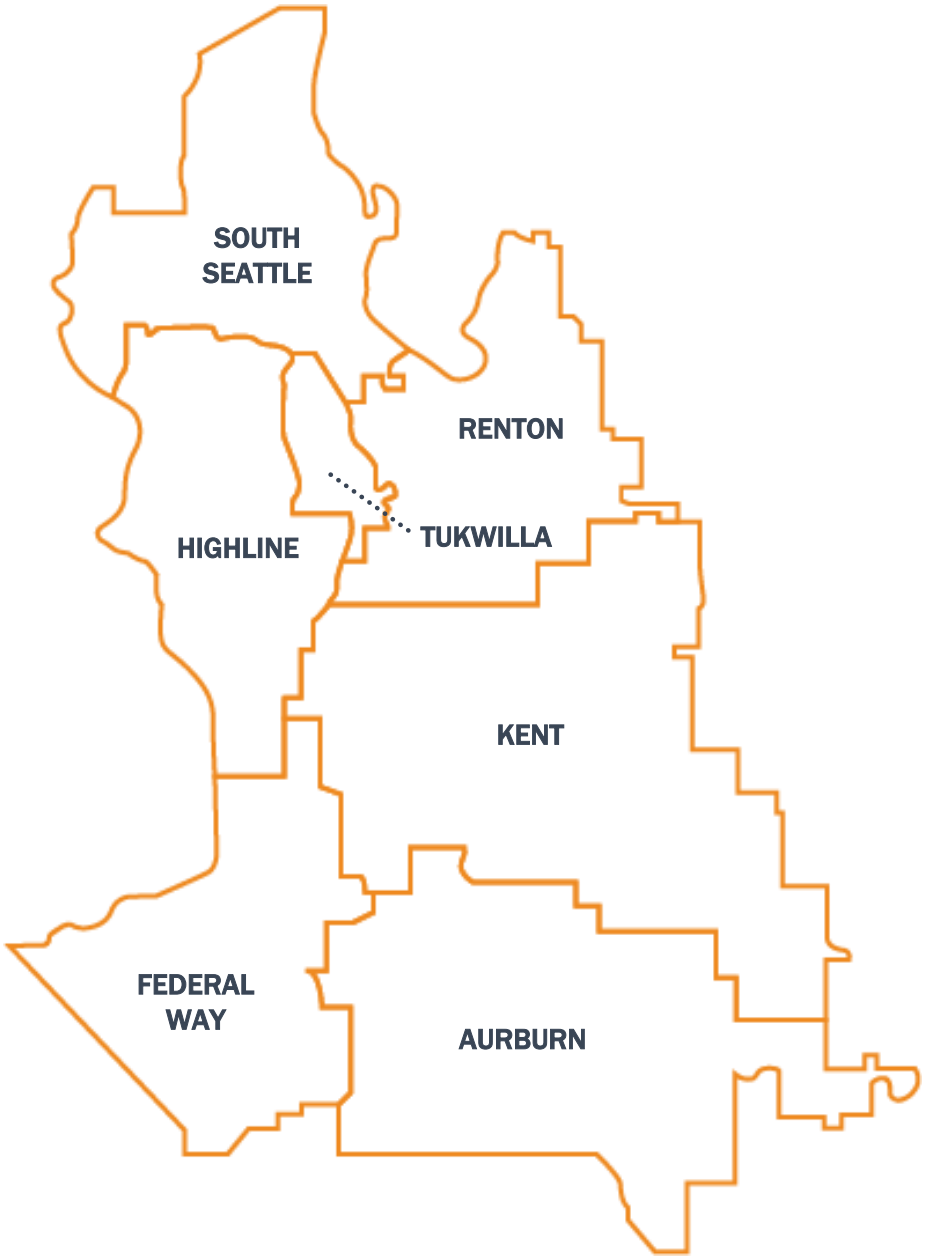
Native Hawaiian/
other Pacific Islander: **10%**

Source. National Student Clearinghouse; Office of Superintendent of Public Instruction student-level database data provided by Washington State Education Research & Data Center and prepared by CCER



Other CCER reports dive more deeply into sector specific issues.

- 2016 CTC report
- Unique look at outcomes for Road Map high school graduates
- Established indicators of student success
- Disaggregation by race/ethnicity
- Breakout by college



The 7 Road Map districts send large shares of their high school graduates to 7 local CTCs

Students from these districts...

- Auburn
- Federal Way
- Highline
- Kent
- Renton
- Seattle (South)
- Tukwila

...enroll directly in large numbers at these CTCs

- Bellevue College
- Green River College
- Highline College
- Renton Technical College
- North Seattle College
- Seattle Central College
- South Seattle College

FOCUS OF THIS ANALYSIS*

This analysis **does not include students who enroll directly from other districts or enroll in other colleges*

SECTION 02

01 Project context

02 **Postsecondary enrollment of Road Map high school graduates**

03 Analysis of 2012 Road Map CTC cohort
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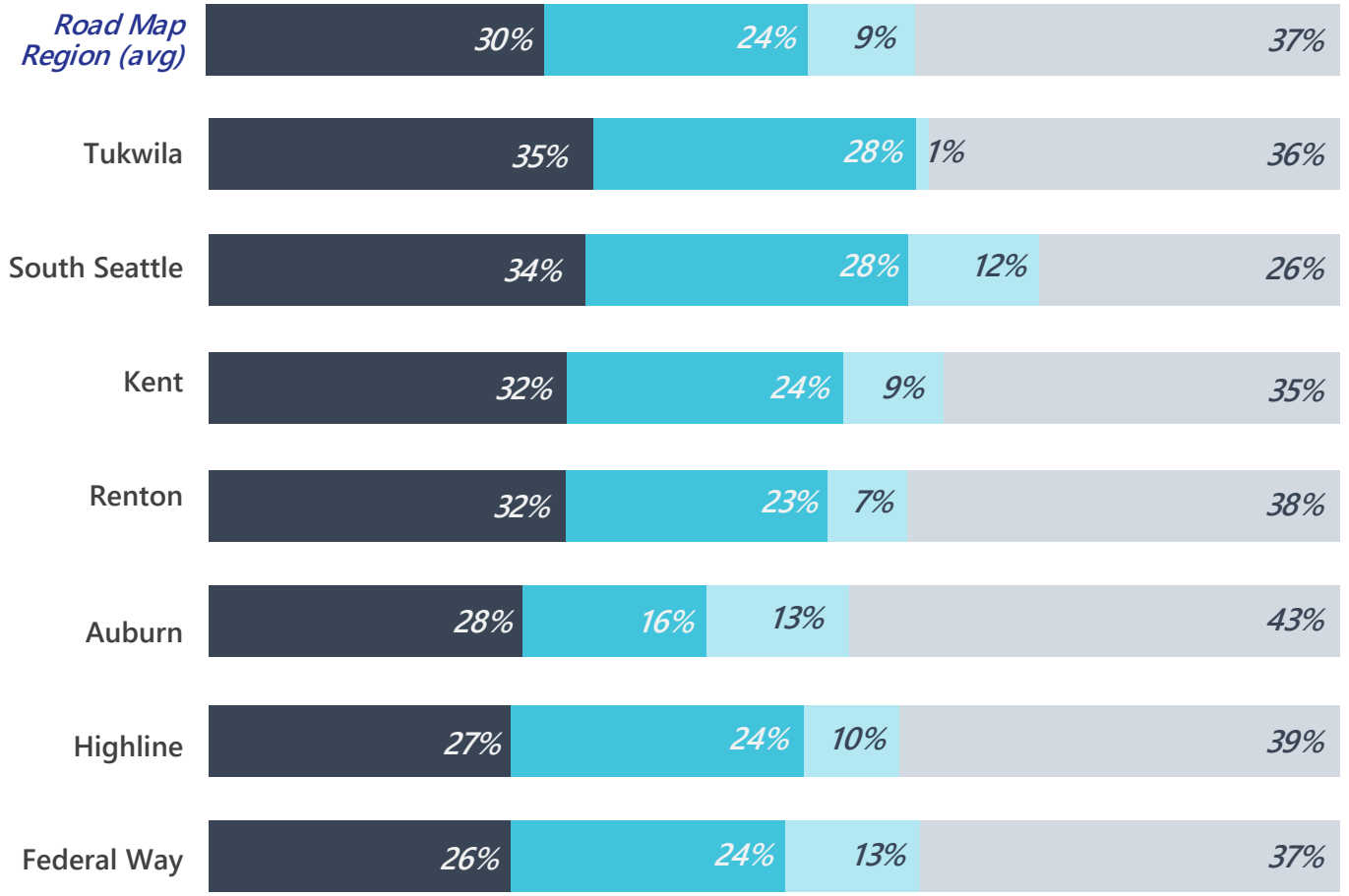
On average,

48% of direct enrollees start at a public 2-year college in the state

- *WA CTC*
- *WA public 4-year*
- *Other college*
- *No direct enroll*



Direct College Enrollment among 2016 Road Map Project Region High School Graduates by School District and Type of College

SOURCES: ERDC HS Feedback Report (2016). Figures include some rounding to sum to 100. South Seattle includes Chief Sealth, Cleveland, Franklin, Garfield, Rainier Beach

SECTION 03

01 Project context

02 Postsecondary enrollment of Road Map high school graduates

03 **Analysis of 2012 Road Map CTC cohort**

- **Cohort demographics**
- **Persistence and completion rates**
- **Indicators of student success**
- **Predictors of on-time completion**

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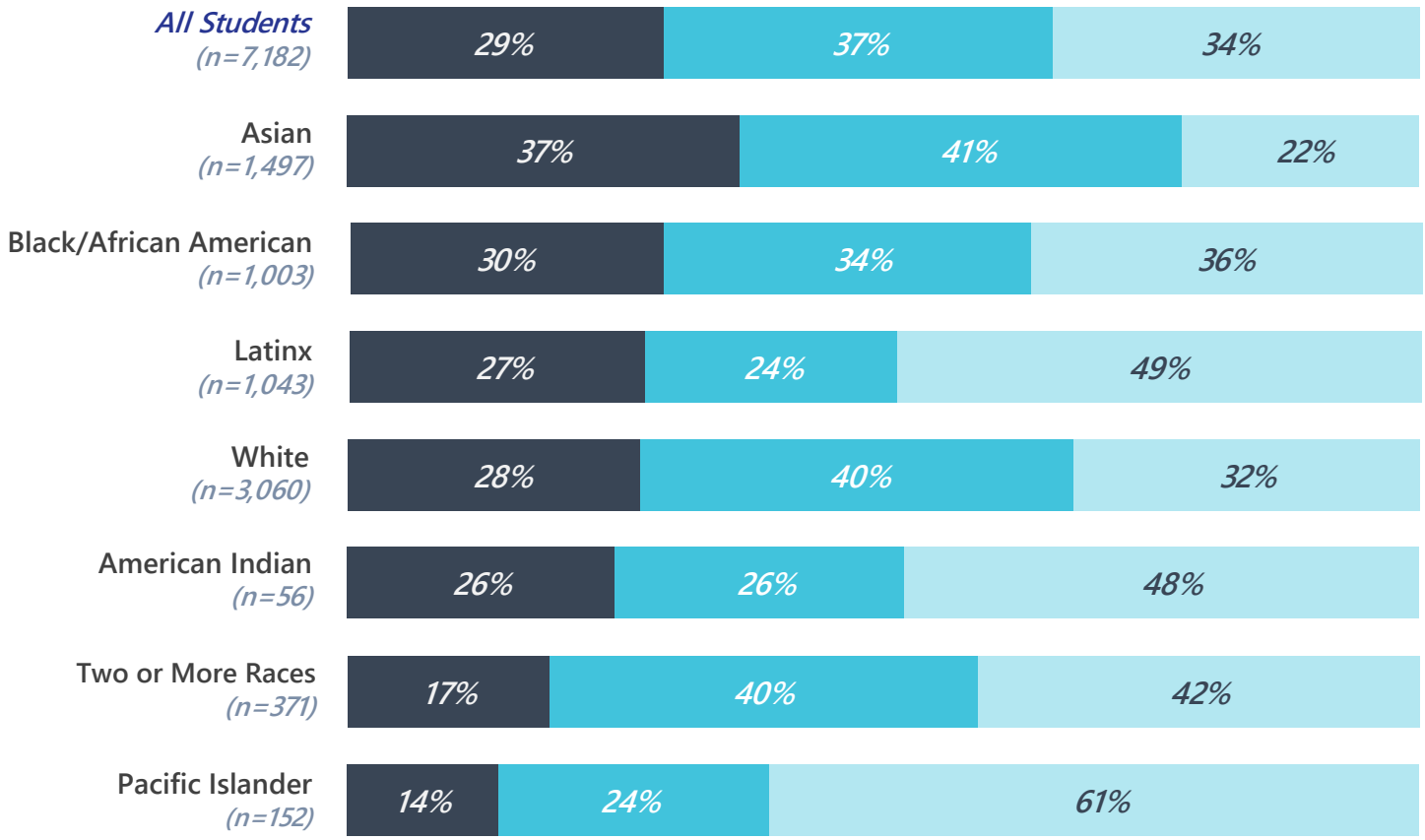
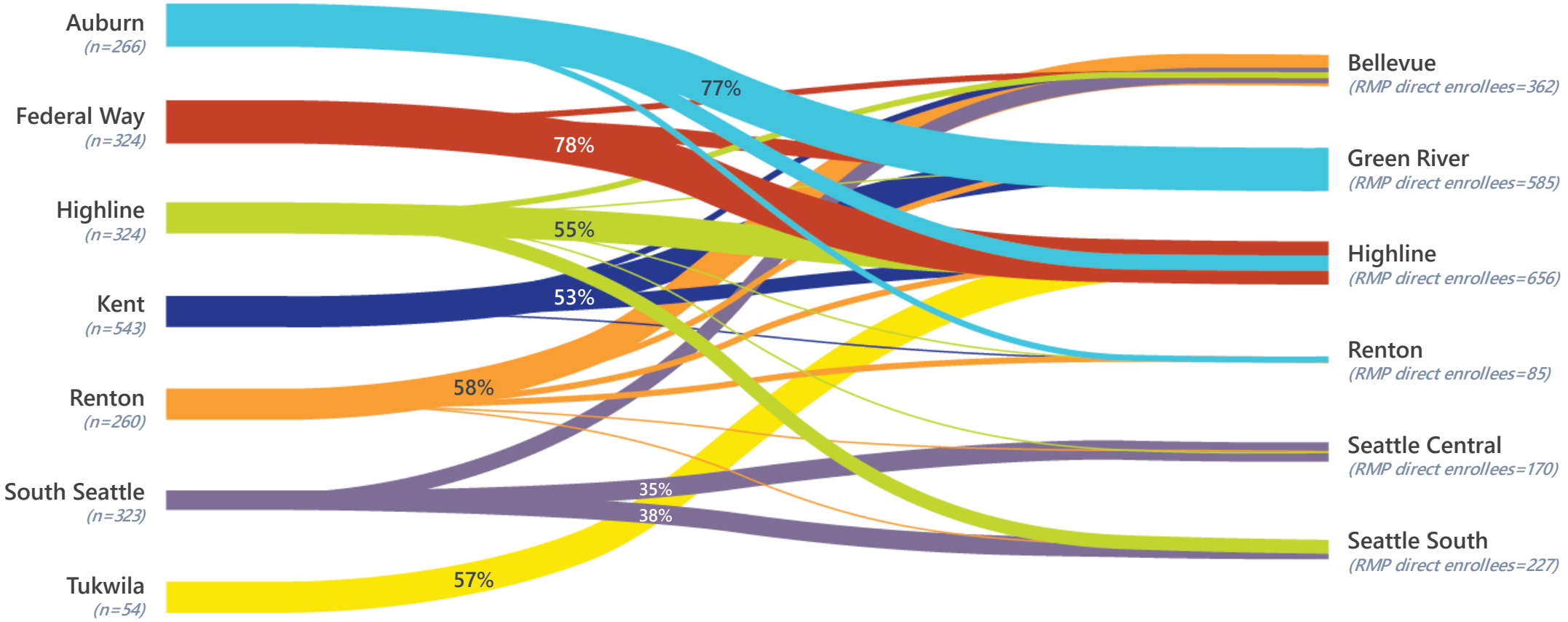
29% of Road Map high school 2012 graduates enrolled directly into Road Map region CTCs. Rates of enrollment vary significantly by race/ethnicity.



Direct College Enrollment among 2012 Road Map Project Region High School Graduates by School District and Type of College

SOURCES: OSPI CEDARS student-level data via ERDC. SBCTC and National Student Clearinghouse (NSC) via ERDC. South Seattle includes Chief Sealth, Cleveland, Franklin, Garfield, Rainier Beach and South Lake.

There are clear high school to CTC "feeder patterns" in the Road Map region (Class of 2012)



Community and Technical College Feeder Patterns among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Local CTCs

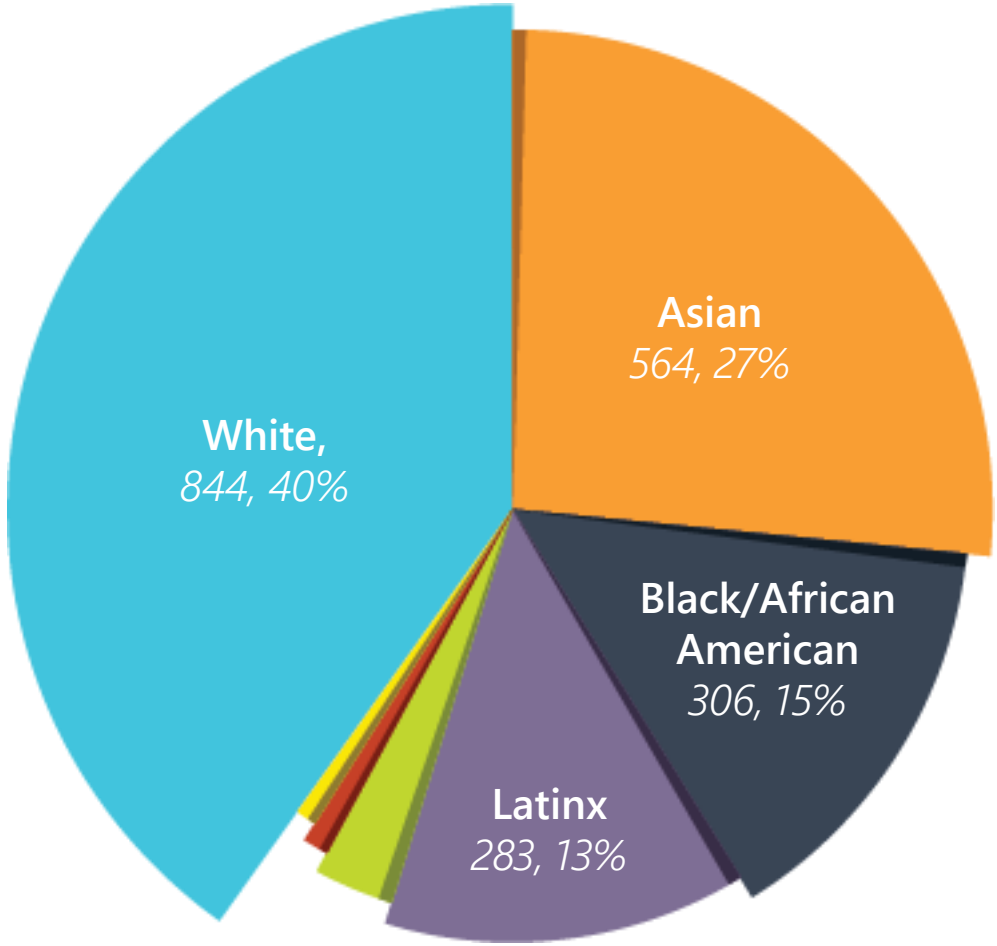
Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC; Note: While North Seattle College is included in the analysis, the results for this college have been suppressed–to ensure student privacy, results with fewer than 10 student are suppressed.

60% of students in the cohort are students of color

2,094
Students

46%
Low-Income at the time of HS graduation

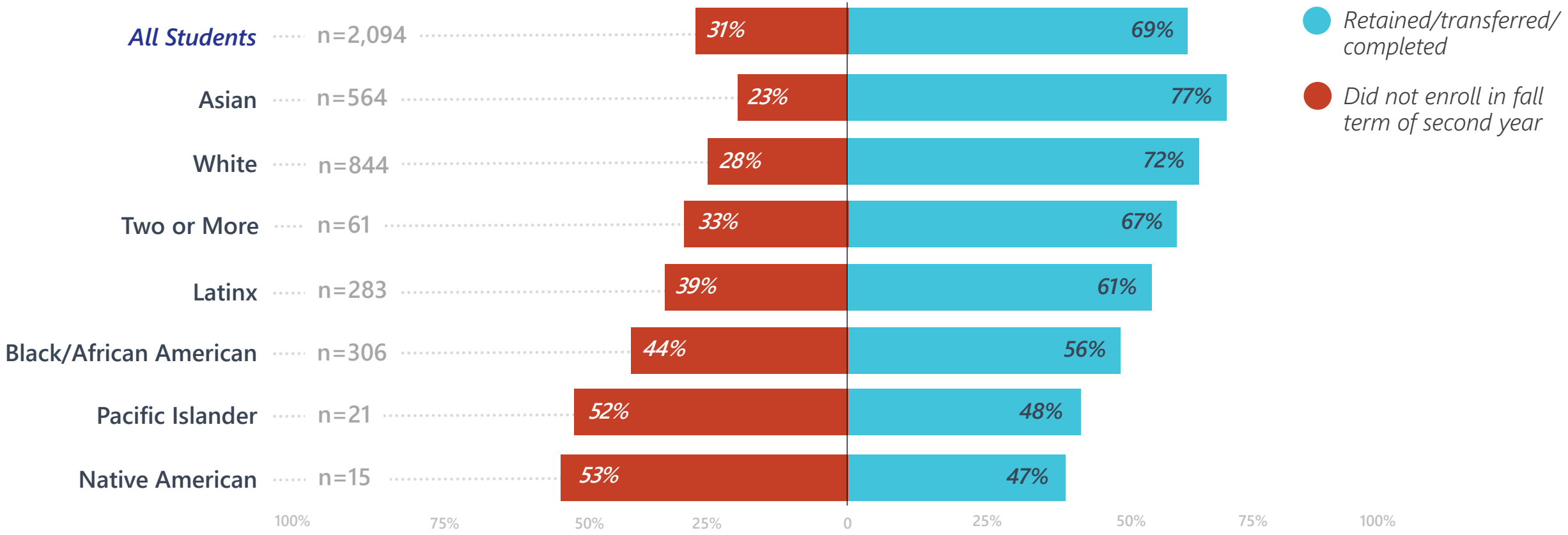
61%
Enrolled full-time



Student Demographics among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

Almost one-third of students do not enroll in fall of their second year

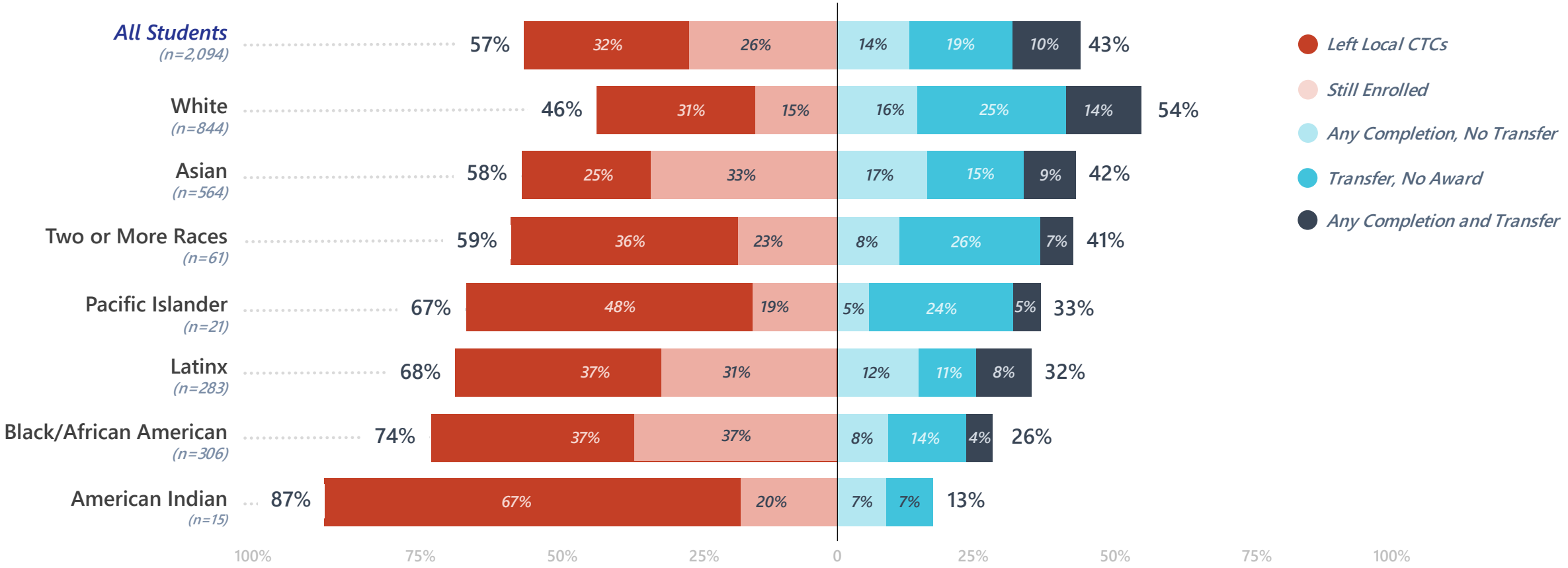


Persistence in Year Two among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Race and Ethnicity

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

Fewer than half of students complete or transfer within three years

(2012 high school graduates)

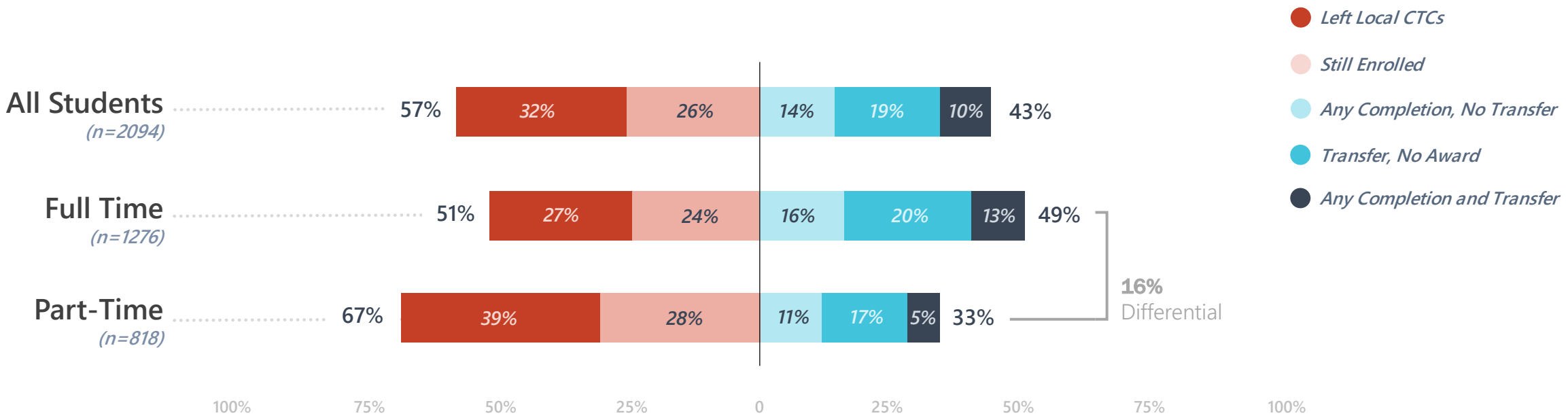


Three-year Outcomes among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Race and Ethnicity

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

Full time students are more likely to complete and/or transfer within three years than students who attend less than full time

(2012 high school graduates)

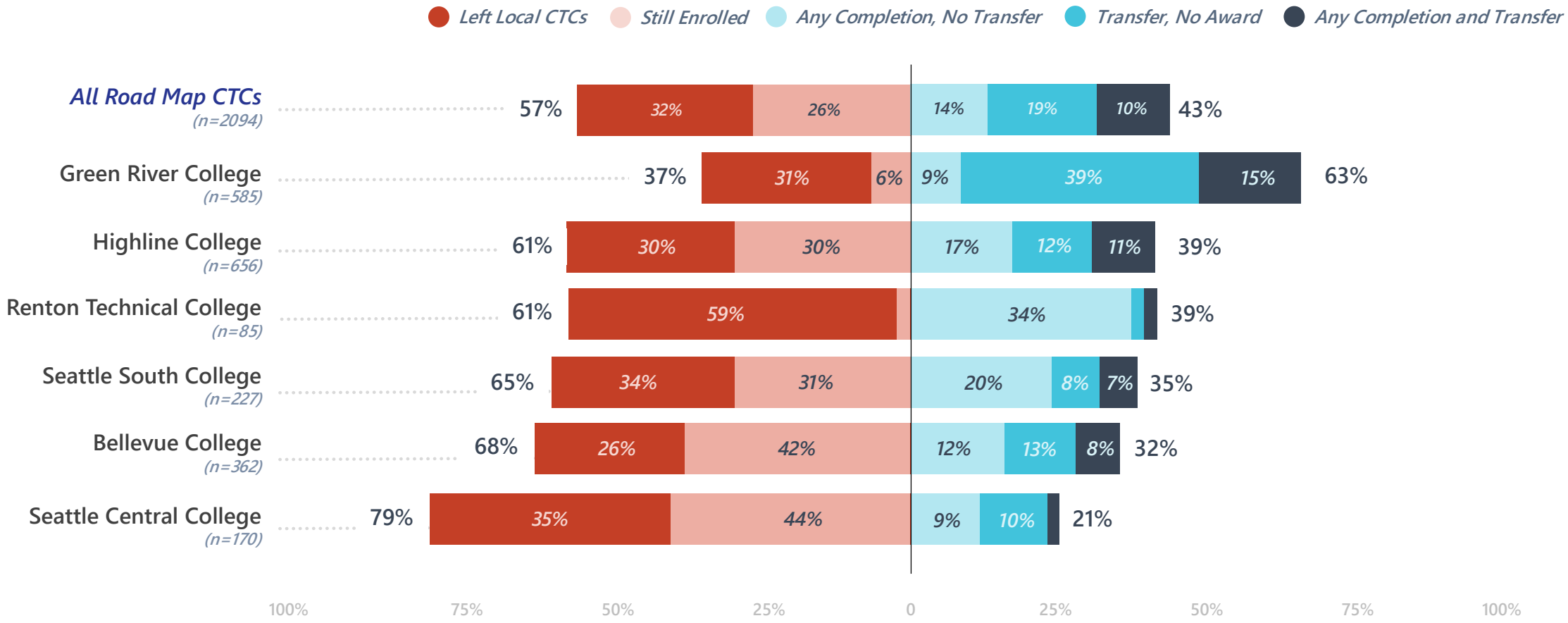


Enrollment Status among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Full- and Part-time Enrollment Status and Three-Year Outcomes

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

There is substantial variation in three year completion/transfer rates by college…

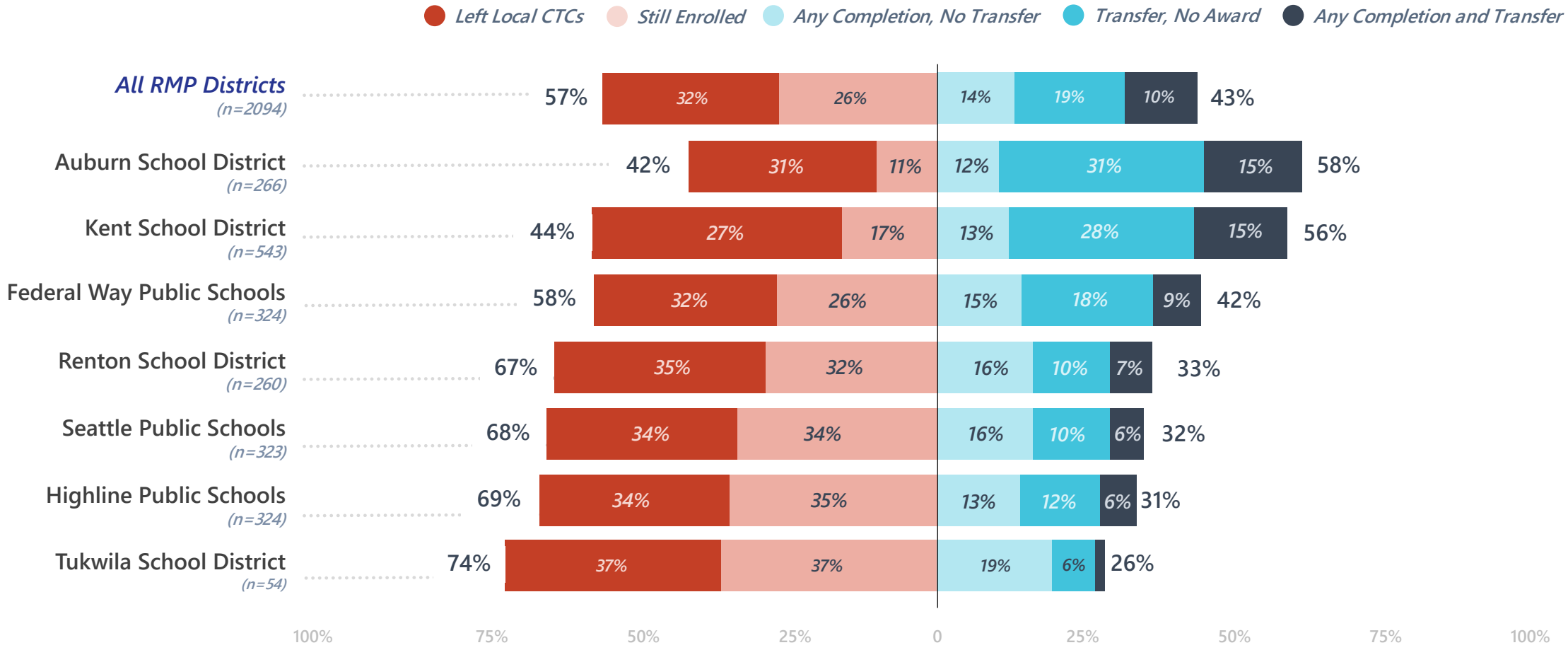
(2012 high school graduates)



Three-Year Outcomes among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Local CTC

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

...and in three year completion/transfer rates by K-12 district.



Three-Year Outcomes among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by K-12 District

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

KEY INDICATORS OF STUDENT SUCCESS

01 *College ready**

02 *Complete 30 or more college credits in year one*

03 *Concentrate in year one**

04 *Pass college level math by end of year two*

What makes these "key" indicators?

- *Identified as relevant via previous studies*
- *Relevant to and actionable for students and system leaders*
- *Measurable using readily available data*

** New this year*

KEY INDICATORS OF **STUDENT SUCCESS**

01 *College ready**

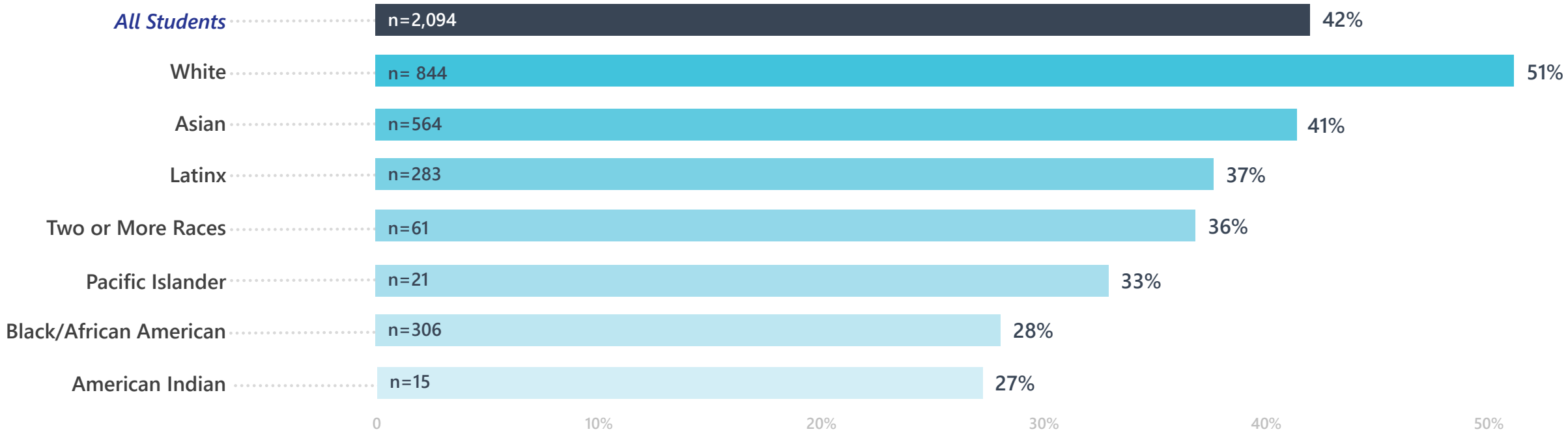
Indicator Context

- *High level of national attention*
- *Slows student progress to completion*
- *Costly for students and the state*
- *Shared responsibility between high schools and colleges*
- *Defined as not taking a developmental course during three year period **and***
    - *Enrolling in college level math and English **or***
    - *Concentrating in first year*

** New this year*

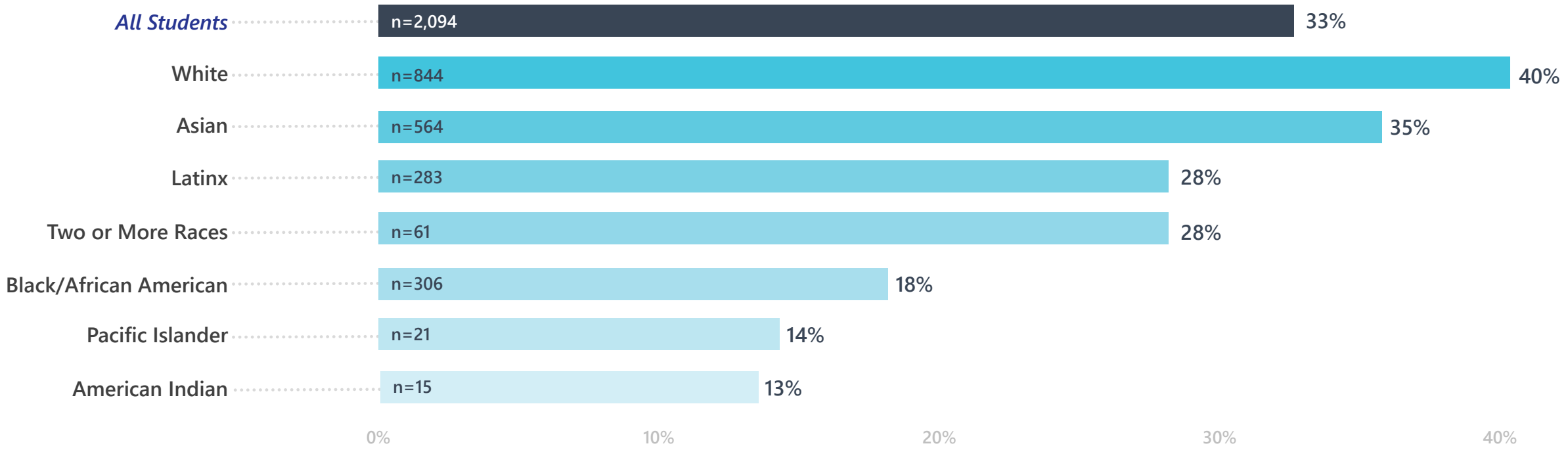
College Readiness (Basic Measure) among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC

By Race and Ethnicity



Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

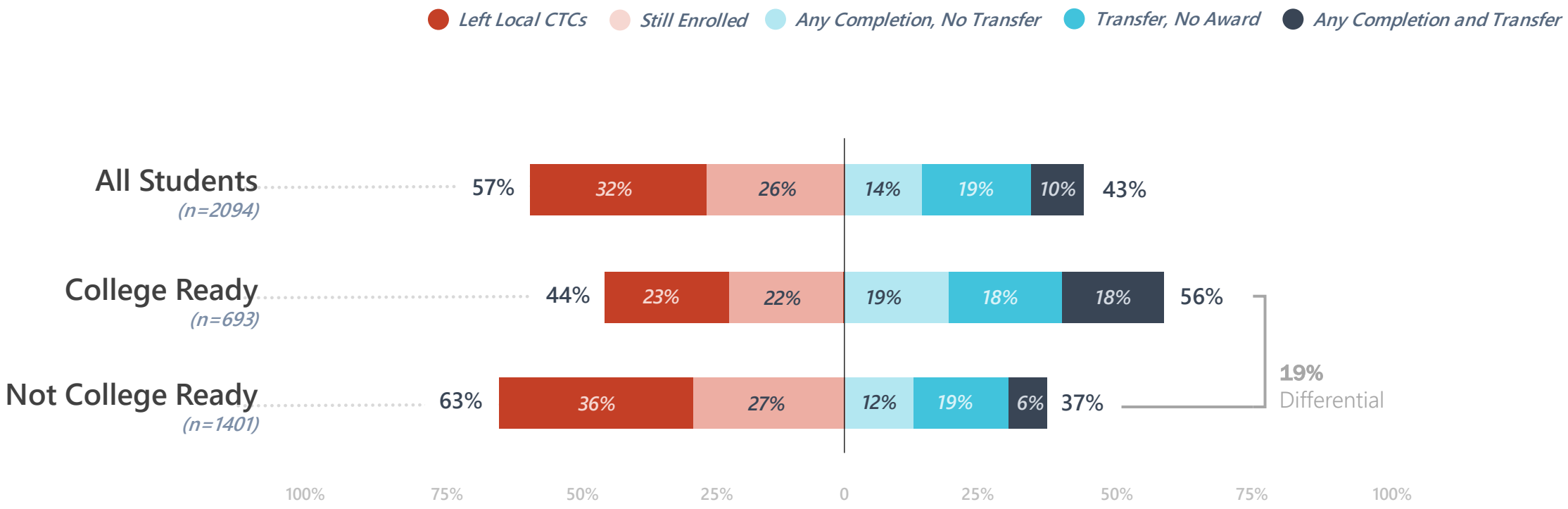
One-third of students in the cohort are “college ready” (no dev ed courses and enroll in college level math and English in first two years or concentrate in first year)



College Readiness (Refined Measure) among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Race and Ethnicity

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

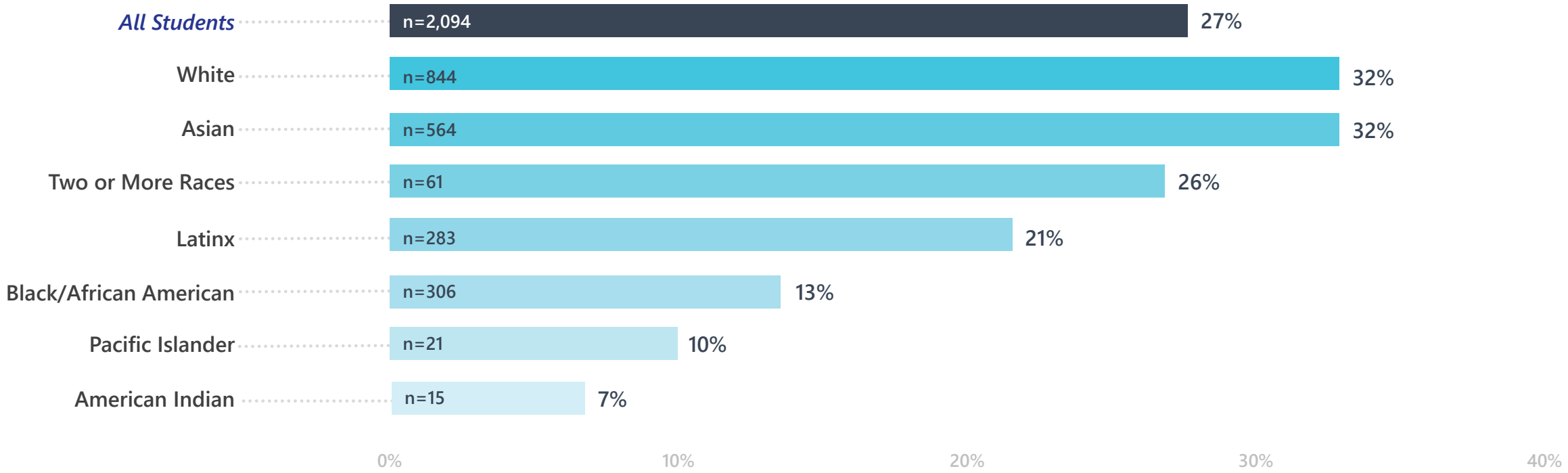
Three year outcomes: College readiness



College Readiness among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Three-year Outcome and Readiness

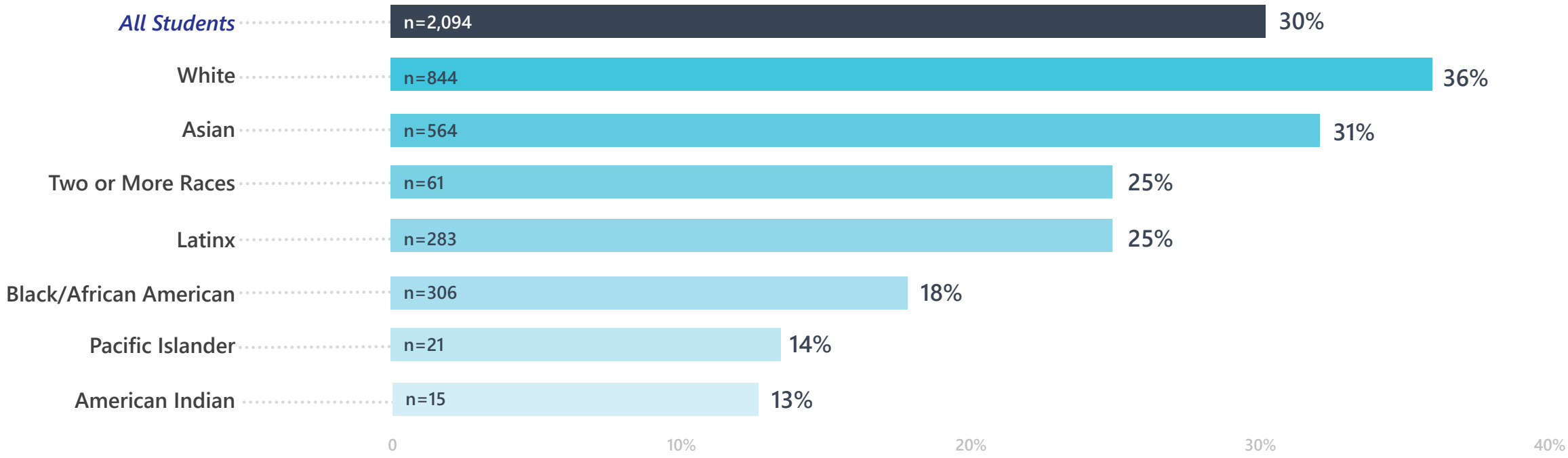
Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

27% of students in the cohort are “college ready” in math…



Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

...and only 30% are “college ready” in English



Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

KEY INDICATORS OF STUDENT SUCCESS

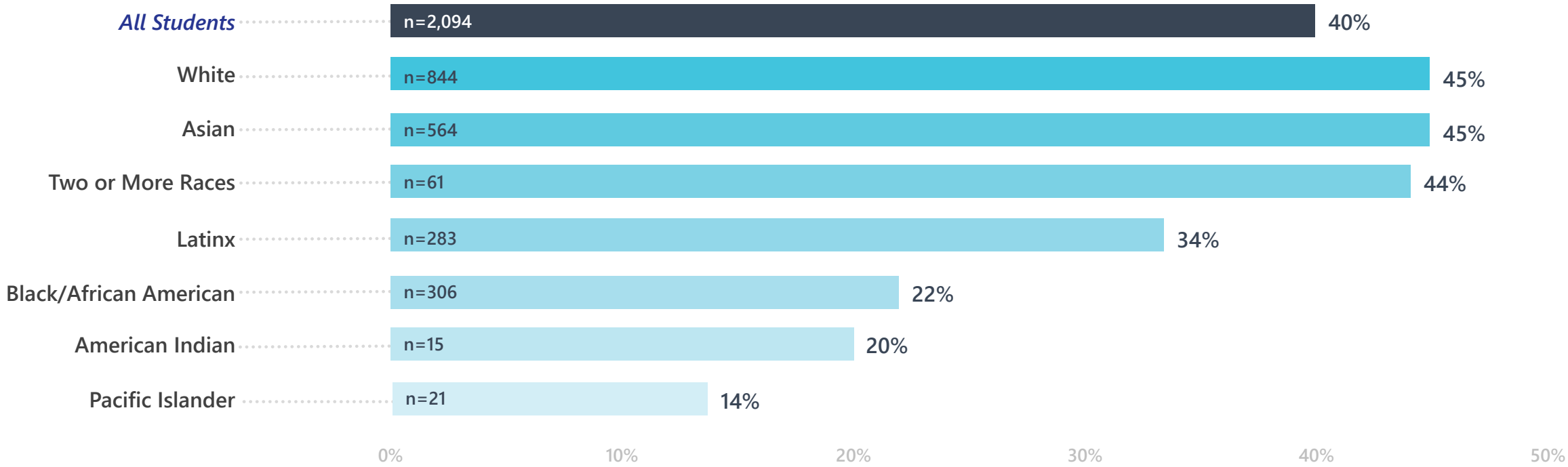
02 *Complete 30 or more college credits in year one*

Indicator Context

- *Credit accumulation demonstrates "momentum" toward a credential*
- *Previous research in Washington CTCs found year one credit accumulation to be "tipping point" that makes completion more likely*
- *Increasing national focus on supporting continuous enrollment (summer courses)*

** New this year*

40% of students complete 30 or more college credits in year one



Completing 30 or More Credits in Year one among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Race and Ethnicity

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

Three year outcomes: Complete 30 or more college credits in year one

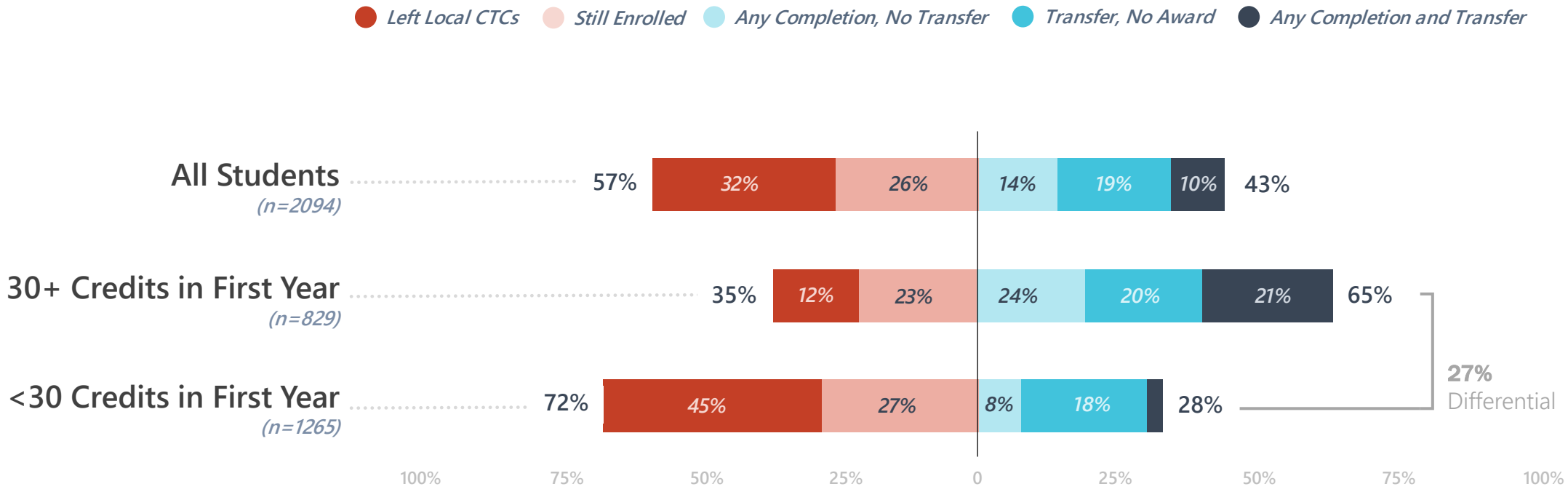


Figure 18. Completing 30 or More Credits in Year One among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Three-year Outcome and 30 or more Credits

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

KEY INDICATORS OF **STUDENT SUCCESS**

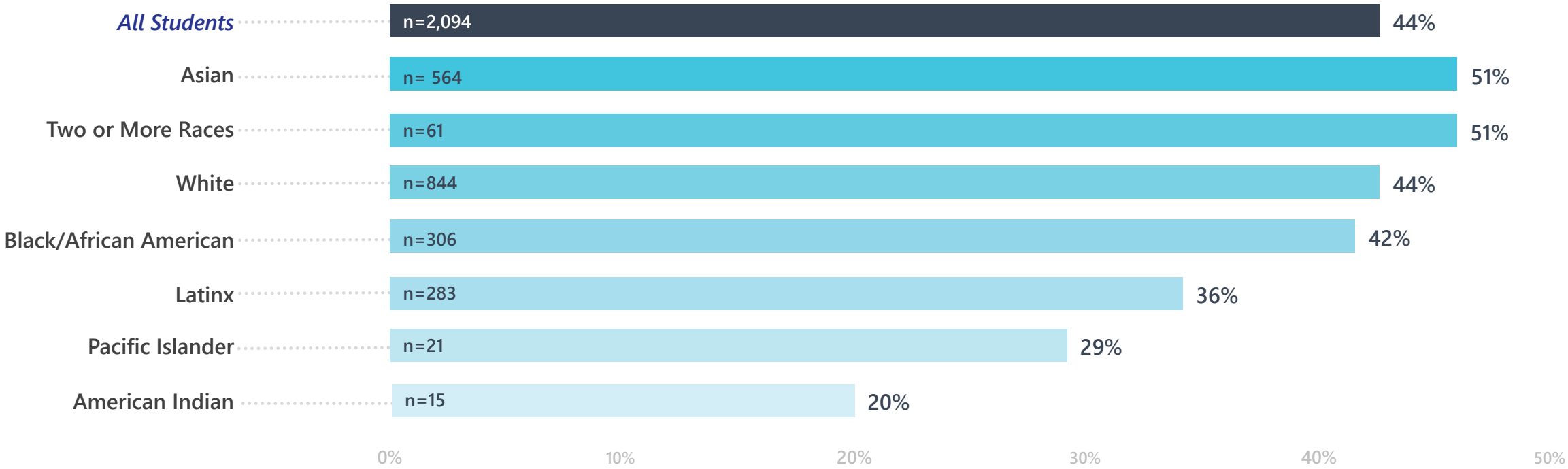
03 *Concentrate in year one**

Indicator Context

- *Accumulating credits is not the only goal -- credits must build toward a credential*
- *Previous research has focused on concentration is correlated with on time completion*
- *Important indicator given recent interest in guided pathways*
- *Concentration = completing 15 credits in a specific program area*

** New this year*

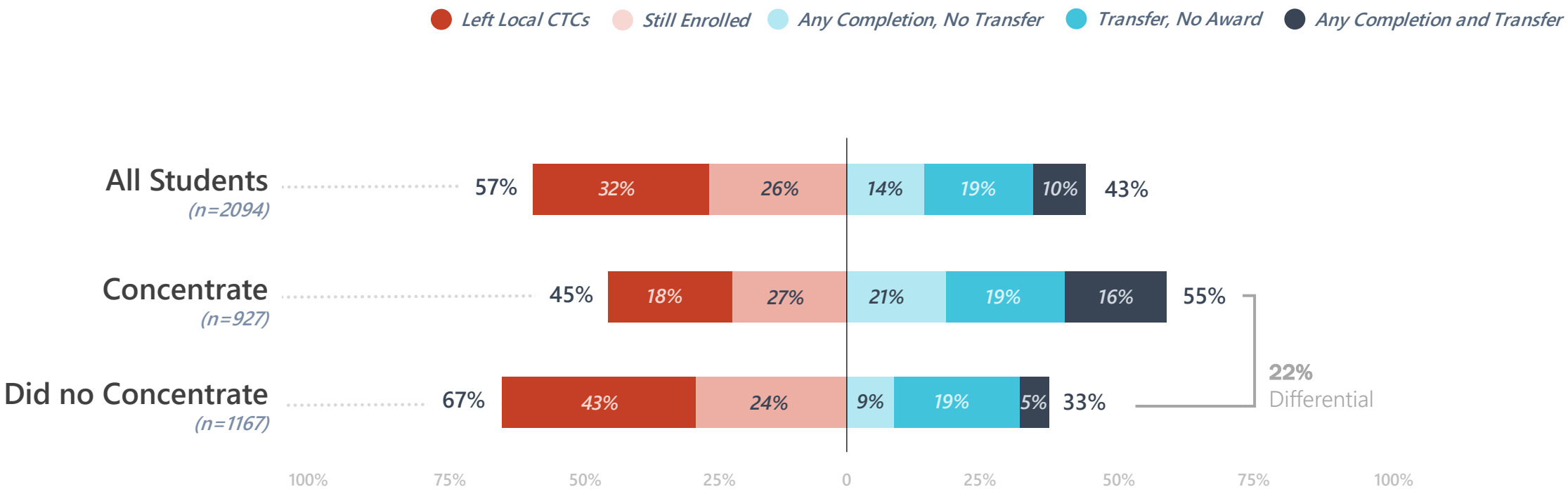
44% of students concentrate in a specific program in year one



Concentration in a Program of Study During Year One among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Race and Ethnicity

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

Three year outcomes: Concentrate in year one



Concentration in a Program of Study During Year One among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Three-Year Outcome and Course Concentration

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

KEY INDICATORS OF STUDENT SUCCESS

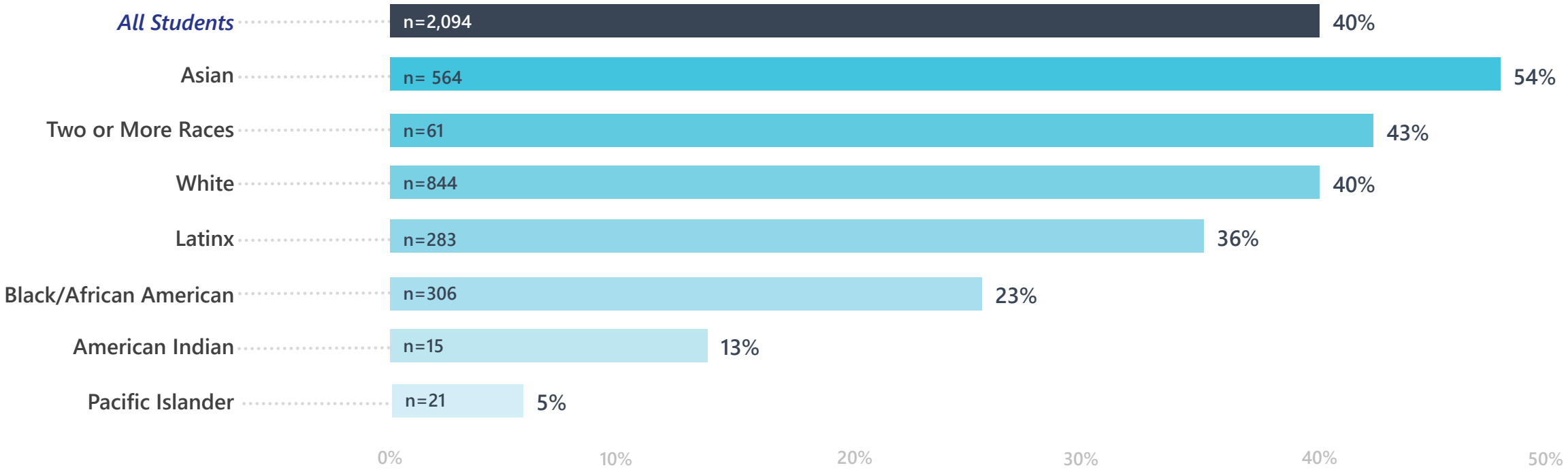
04 *Pass college level math by end of year two*

Indicator Context

- *College level math required for nearly all CTC credentials*
- *Math is a well documented barrier for CTC students*
- *Numerator = students who passed college level math by the end of their second year*
- *Denominator = all students in cohort*

** New this year*

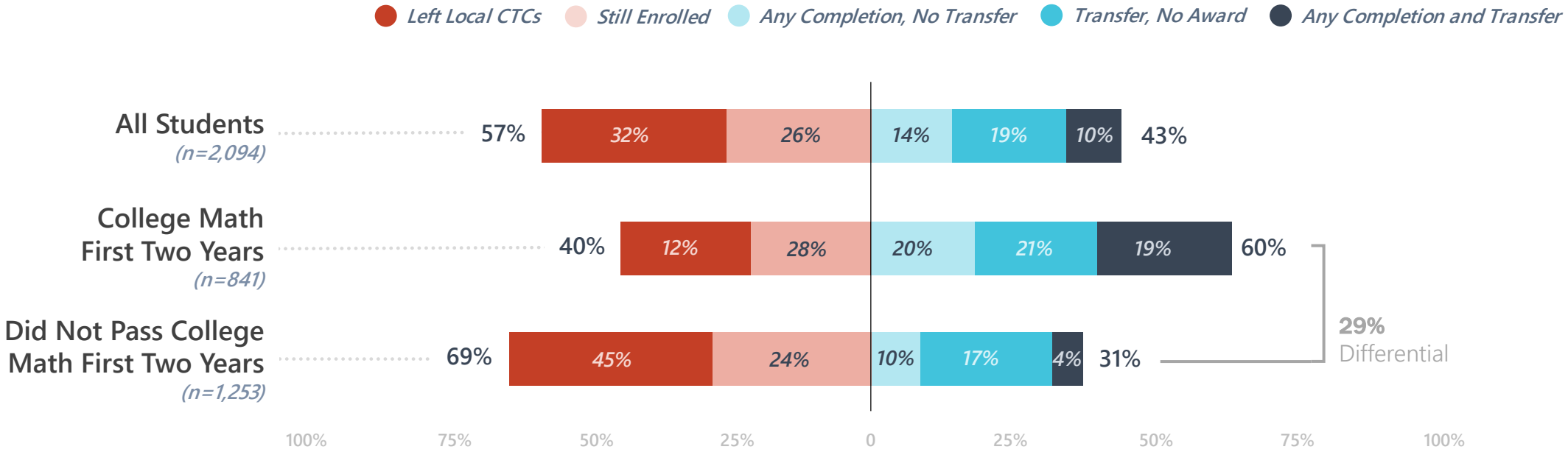
40% of all students in the cohort pass a college level math course by the end of year two



Taking a College-Level Math Course by End of Year Two among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Race and Ethnicity

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

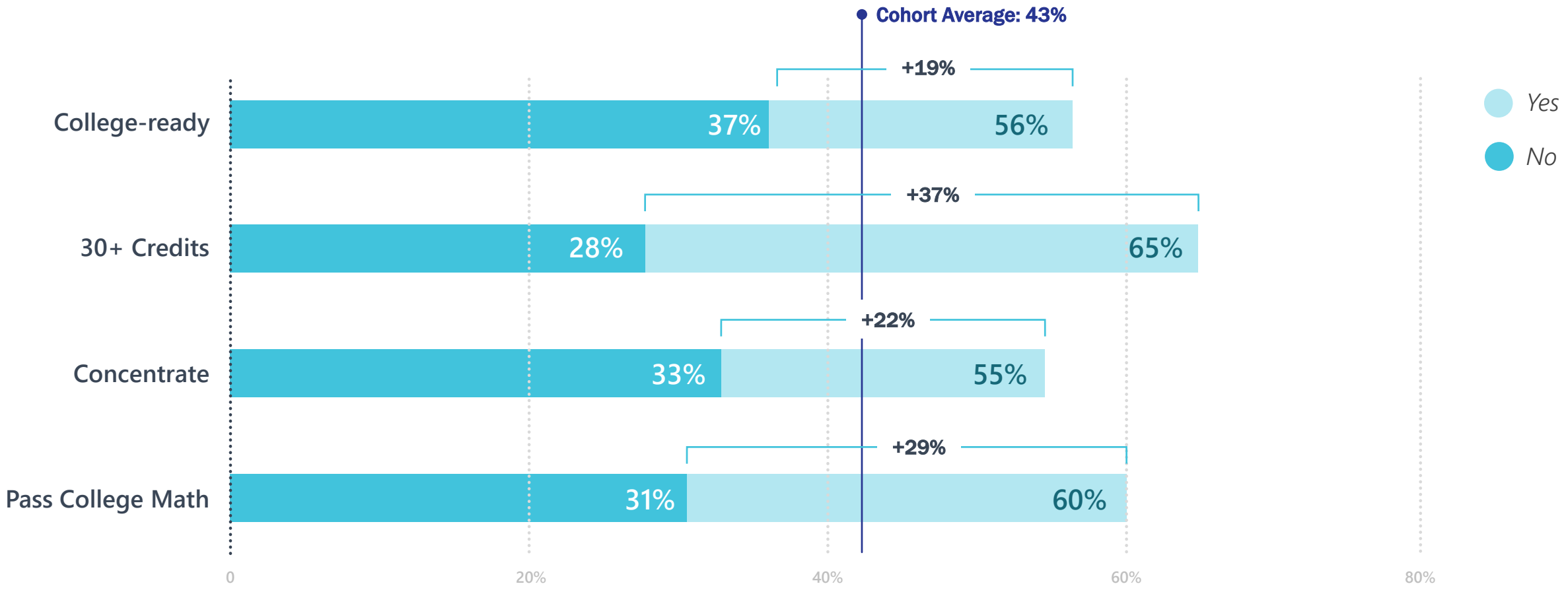
Three year outcomes: Pass college level math by end of year two (all students)



Taking a College-Level Math Course by End of Year Two among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Three-year Outcome and Math

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

Rate of three year credential completion and/or transfer by indicator and status



Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

What about high school coursetaking?

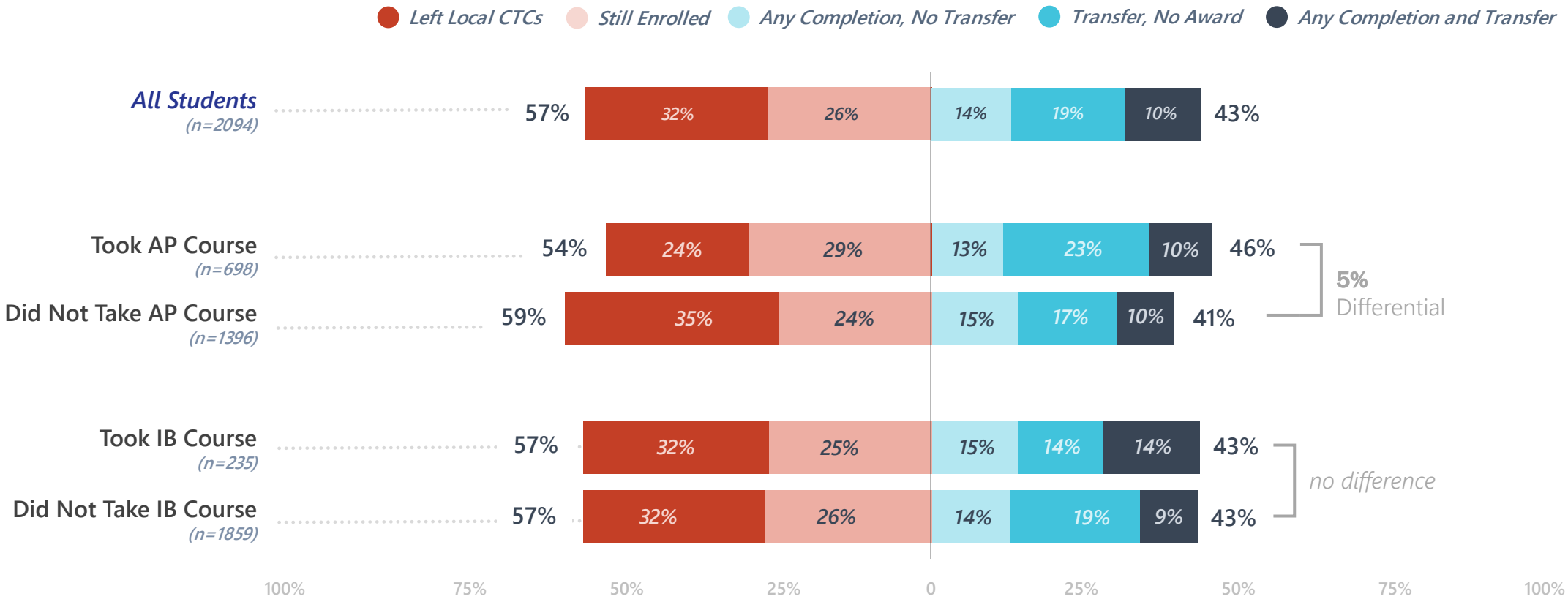
Approximately 1/3rd of Road Map CTC students (class of 2012) took an advanced placement (AP) course during high school and 1 in 10 took an IB course

	Total	*Advanced Placement*	*International Baccalaureate*
All Students	2,094	33%	11%
Two or More Races	61	43%	11%
Asian	564	38%	11%
White	844	35%	10%
Latinx	283	29%	13%
Black/African American	304	25%	11%
American Indian	15	20%	7%
Pacific Islander	21	14%	14%

Advanced Placement and International Baccalaureate Coursetaking rates among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Race and Ethnicity

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

Few differences in outcomes among CTC students who ever took an AP or IB course during high school

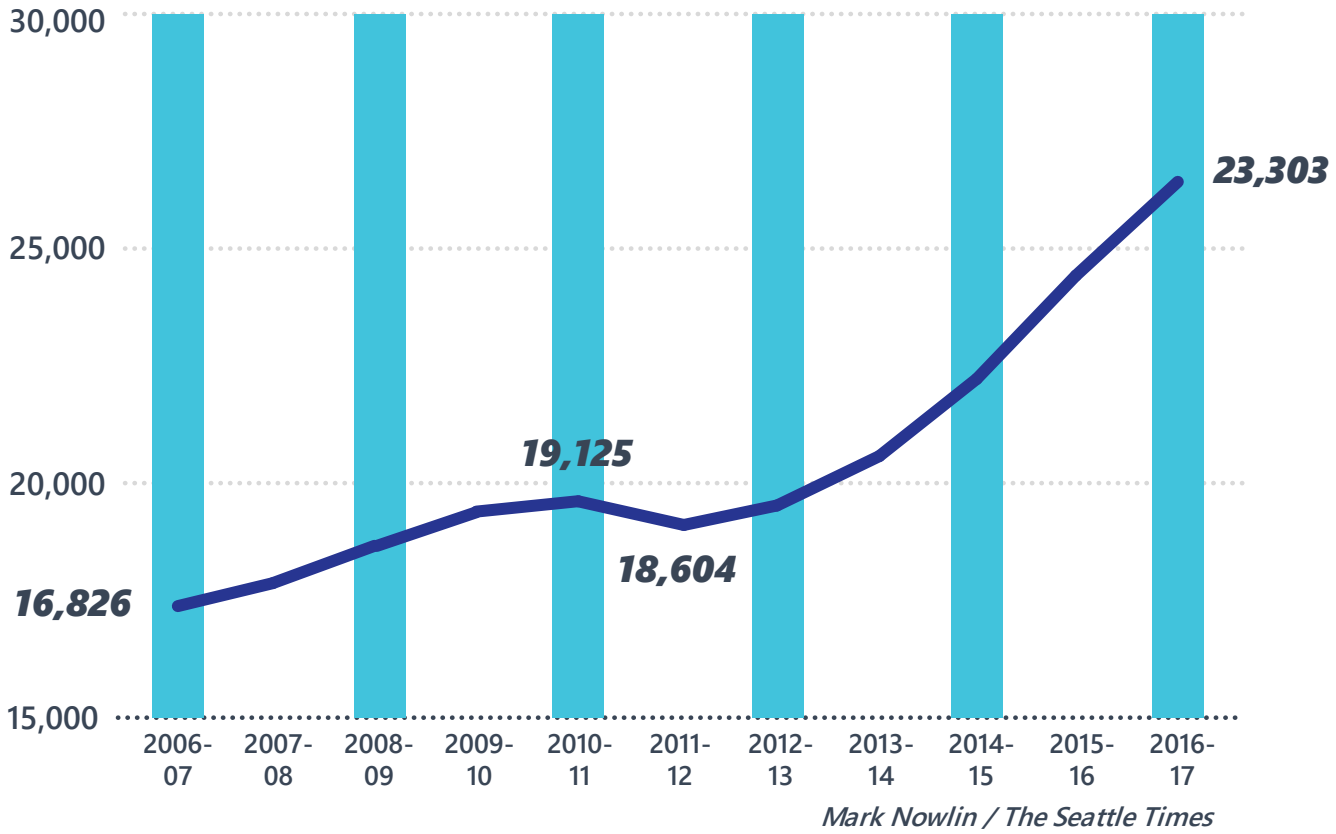


Advanced Placement and International Baccalaureate Coursetaking among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Coursetaking and Three-year Outcome

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

Running Start: an increasingly common intervention to boost college enrollment and success

▶ *Running Start enrollment over time (by headcount)*

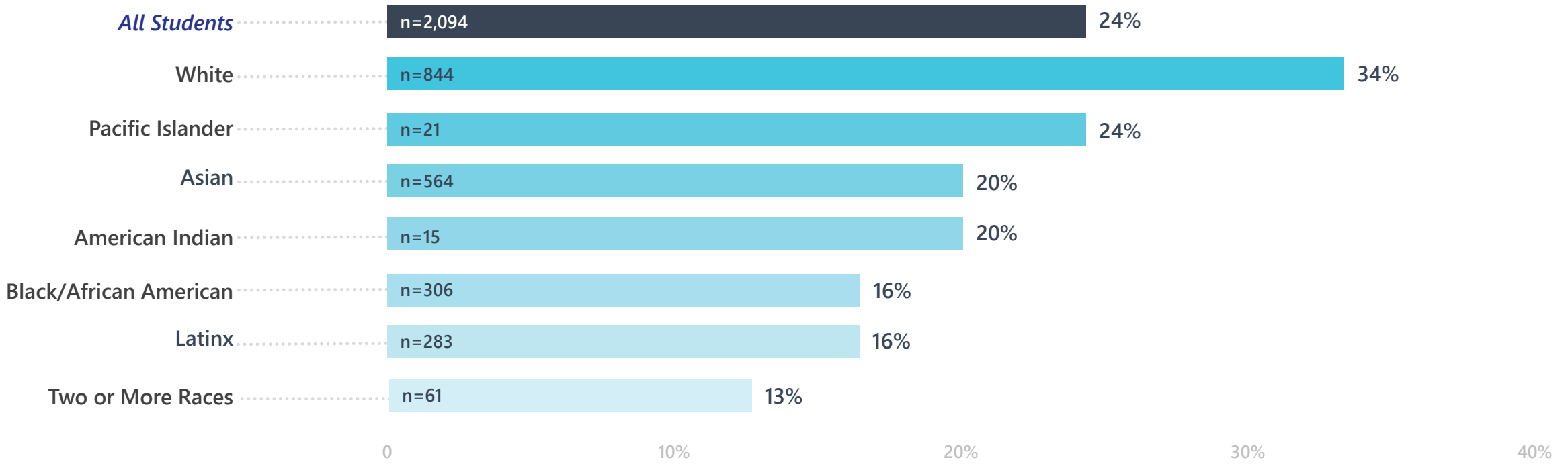


Mark Nowlin / The Seattle Times

- *Initiated by the state legislature in 1990*
- *Allows high school students to take credit bearing college courses*
- *Students do not pay college tuition, but must buy own books and pay course fees*
- *Growing in popularity as a way to reduce college costs*
- *Persistent questions about equitable access*

SOURCES: Superintendent of Public Instruction, State Board for Community and Technical Colleges.

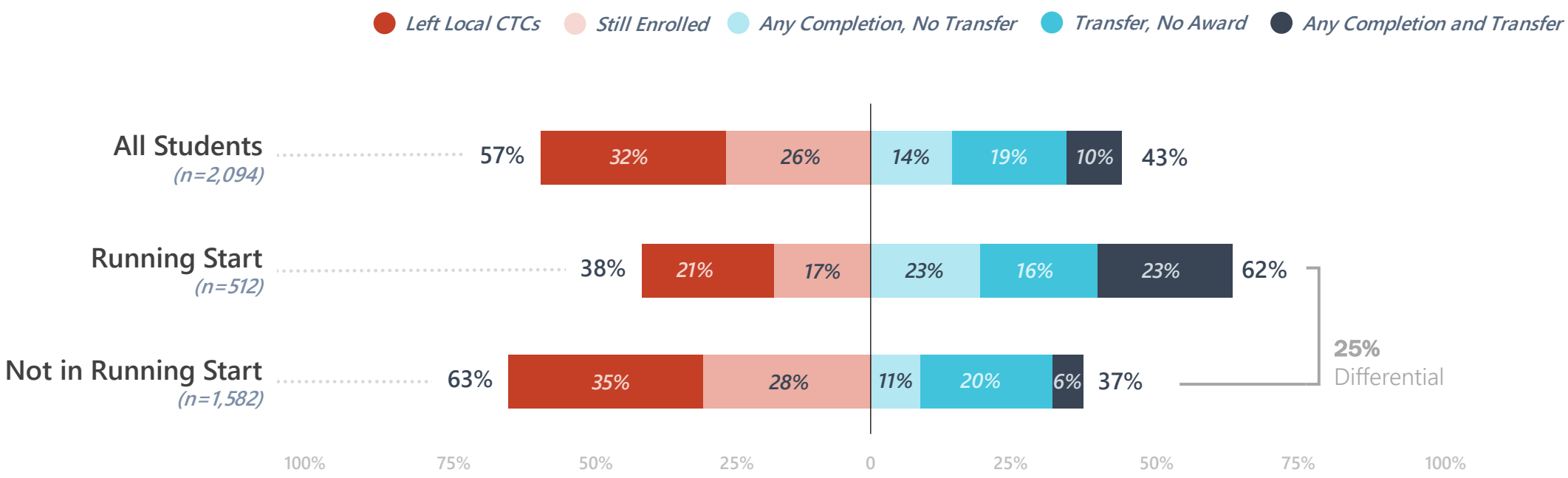
Roughly one quarter of students in the 2012 cohort participated in Running Start



Prior Running Start Enrollment among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Race and Ethnicity

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

Three year outcomes:
Running Start participation



Prior Running Start Enrollment among Road Map Project Region 2012 High School Graduates who Directly Enrolled in a Local CTC by Three-year Outcome and Running Start in High School

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

What are the **strongest predictors** of on-time credential completion?

WHY CONDUCT A PREDICTIVE ANALYSIS?

01 *Resource constrained environments require prioritization*

02 *Static look at indicators is useful, but does not fully explain what's driving the difference in outcomes*

03 *Predictive analysis controls for other factors to identify key indicators/interventions*

04 *Caveat: Exploratory in nature and should not be viewed as definitive*

Overview of logistic regression

$$logit(P(AwdT = 1 \mid X)) = B_0 + B_i X_i^T$$

WHERE,

$$AwdT = \begin{cases} 1 & \text{if student received an award and/or transferred to a 4-year college} \\ 0 & \text{if student is still enrolled or left the local CTC system} \end{cases}$$

AND,

X_i = matrix containing our indicators.

Indicator Summary

Outcome of Interest

Award attainment or transfer to a 4-year school within 3 years of enrolling for direct enrollees.

Derived

HS

- Number of passed AP semesters.
- Number of passed IB semesters.
- Running start participation.

CTC

- Successful completion of college level math after year 2.
- Overall credit accumulation (30 or more) in year one.
- Program Concentration in Year one.

Others

CTC

- Full-time status

Student Demographics

- Gender
- Race/Ethnicity
- Cohort year

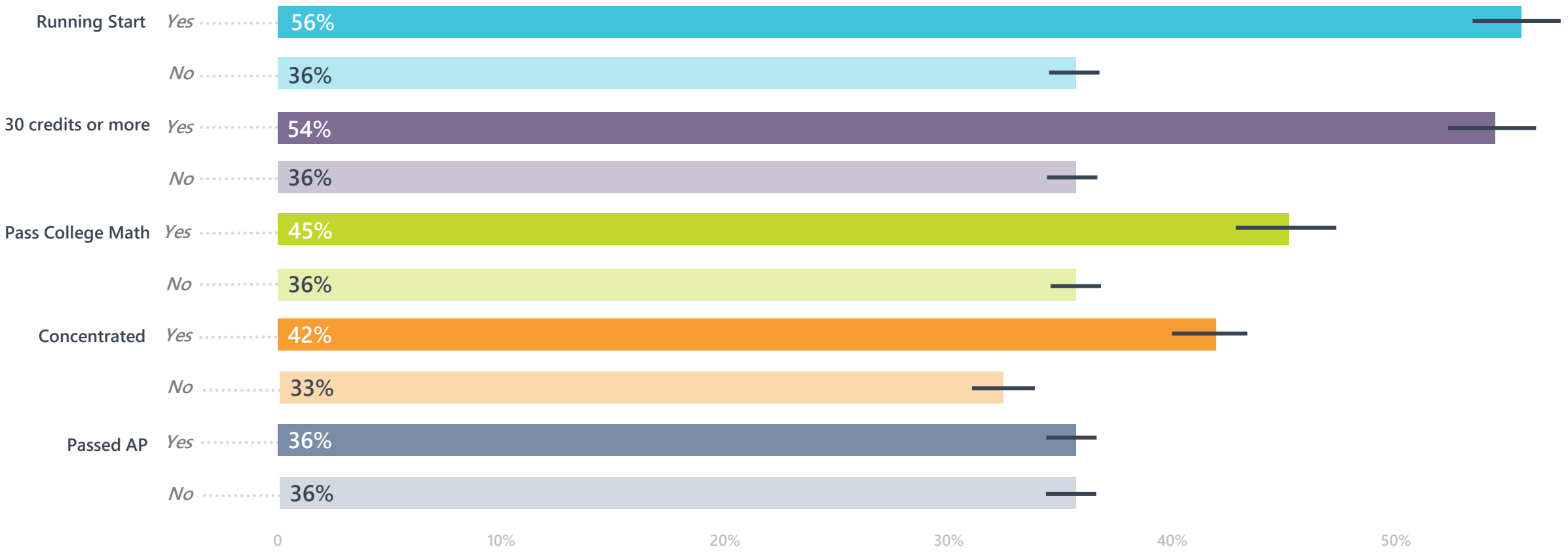
Our model could include more factors, but it is relatively stable

Area Under the curve (AUC) = 78% (helps determine how well model is capturing the variance accurately, ideally we want +80%)

Classification error = 19% (Cross validated measure for generalizability, we want to be below 20%)

No cohort effects (this a good thing)

Analysis: HS and CTC factors and probability of three-year completion and/or transfer



Predicted Likelihood of CTC Completion among Road Map Project Region 2011 and 2012 High School Graduates who Directly Enrolled in a Local CTC By Indicator

Sources. CCER education data warehouse: OSPI CEDARS student-level data and SBCTC via ERDC

Analysis: Student characteristics and student success

Black/African American, Latinx, and Asian students are less likely to have positive outcomes when compared to their White peers.

Women have better outcomes than men in our region.

SECTION 04

01 Project context

02 Postsecondary enrollment of Road Map high school graduates

03 Analysis of 2012 Road Map CTC cohort
- Cohort demographics
- Persistence and completion rates
- Indicators of student success
- Predictors of on-time completion

04 Recommendations for system leaders

05 Open questions and next steps

Recommendations for local K-12 and CTC leaders

Results	*Strategies*
Address unacceptable opportunity gaps that exist by race/ethnicity	• Provide additional resources and supports to students from historically underserved groups
Improve rates of direct college enrollment	• Partner with "feeder" HS/college to develop and implement a plan to improve enrollment rates with clear targets • Explore "promise" programs and interventions designed to reduce barriers to college
Minimize the need for developmental education	• Use multiple measures to reduce the need for developmental education • Consider co-requisite remediation and other models that can help students complete college level courses as quickly as possible
Increase number of students who accumulate 30 credits in first year	• Encourage/support students to take more credits each semester • Encourage/support students to enroll in summer courses
Build a better understanding around student access to and experiences in Running Start	• Conduct further quantitative and qualitative analysis • Improve access to Running Start and scale up participation if/as appropriate
Explore barriers to credential completion before transferring to a four year institution	• Conduct further quantitative and qualitative analysis • Consider strategies to automatically award credentials to students who meet requirements (e.g., reverse transfer)

Comprehensive efforts are needed to achieve **dramatic improvements**

"Promise" programs:

Over 240 college promise programs nationally with growing evidence of positive, sustained impact on college enrollment and completion

Strongest models pair scholarship with high quality student supports

Seattle in process of implementing a citywide promise program for all graduating high school seniors

"Guided pathways":

Students are more likely to complete if they "choose a program and develop an academic plan early on, have a clear road map of the courses they need to take to complete a credential, and receive guidance and support to help them stay on plan" (CCRC 2015)

Significant efforts to implement guided pathways are underway nationally and within Washington State (WA SBCTC and College Spark)

Two Road Map colleges – South Seattle and Renton Tech – implementing now and others are in planning phases

How do we ensure the "promise" doesn't stop at Seattle city limits?

How do we accelerate the shift to guided pathways in Road Map CTCs?

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04 Recommendations for system leaders

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Thank You!

Community Center for Education Results
Supporting the Road Map Project