OPENING THE DOORS TO THE JOBS OF THE FUTURE

WITH A BOLD AND AMBITIOUS EARLY COLLEGE EXPANSION STRATEGY

MassINC Policy Center

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MassINC is a nonpartisan, non-profit civic organization working to make Massachusetts a place of civic vitality and inclusive economic opportunity. We believe public policy should be informed by data, evidence, and accurate information and that policy makers should be transparent and accountable to the public. We do our work across three independent divisions—the MassINC Policy Center, our civic news organization CommonWealth Beacon, and our subsidiary company, The MassINC Polling Group.

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Authors

Ben Forman, Director, MassINC Policy Center
Nikolas Lazar, Research Intern

Graphic Design

Sharoline Galva

Editing

The Hired Pens

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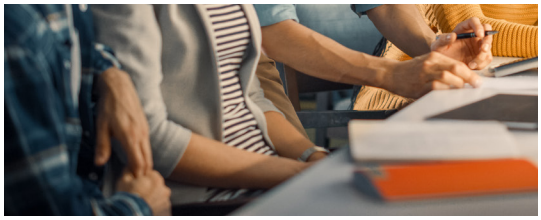


EXECUTIVE SUMMARY

Early College has demonstrated exceptional power to open doors to the jobs of the future and ensure that Massachusetts maintains the large skilled workforce that is central to its economic competitiveness. To build on the legislature's considerable investment in this initiative and harness the full potential of Early College, Massachusetts must expand access to this program to far more students and provide them with robust, career-connected learning experiences. State education policymakers are currently devising a strategy to guide Early College expansion. This MassINC Policy Center white paper proposes four high-level objectives for the plan, with rationale and recommendations for achieving them:

Objective 1: Provide universal access to all low-income students who could benefit from Early College.

Rationale:

- Low-income students are enrolling and completing college at half the rate of non-low-income students, and the gap is growing. Early College consistently doubles the odds that low-income students enroll and persist in higher education. However, access to this program remains very limited. After seven years, the Massachusetts Early College Initiative (MECI) has reached just 4 percent of low-income high school students.

- To have a significant impact on the state's skilled workforce, Massachusetts will need to provide Early College to the maximum number of students who could benefit. Analysis of current enrollment patterns suggests that there are approximately 28,000 low-income students who could benefit from Early College and who would likely take advantage of it given access.

- Massachusetts can reach about half of these low-income students by selectively expanding Early College in the 104 high schools that have more than 400 students and below-average rates of college matriculation. This includes 67 high schools within 5 miles of a public college or university that could provide primarily on-campus learning, as well as 37 high schools in more rural areas that could provide hybrid/online Early College.

Recommendation: The Early College expansion strategy must advance policies that expedite growth in the 104 high-potential high schools, while laying the groundwork for models that will eventually expand access to all low-income students who could benefit. The plan must include particular emphasis on increasing hybrid/online learning to both reach rural students and efficiently deepen course options for those participating in primarily on-campus programs.

Objective 2: Integrate robust career pathways to draw more students to Early College and prepare them for the full breadth of professional opportunities in the state's advanced industries.

Rationale:

- Early College pathways that expose students to advanced industries and prepare them to pursue degrees in these fields are underdeveloped. Accounts from local partnerships suggest that MECI is actively discouraging programs from developing career-connected Early College pathways.

- A lack of opportunities for applied and contextualized learning constrains growth by severely limiting students' interest in Early College. A general education-focused approach also hamstrings the intervention's innate potential to place students on pathways to fields such as health and STEM, which require long sequences of challenging academic courses.

Recommendation: The plan should identify career pathways for strategic focus. For each of these priority pathways, the plan should lay out action items to expedite the development of a more robust program of study that includes specialized advising, high-quality career development experiences, and credit accumulation goals tailored to what is reasonable and achievable for students in each of these fields. In addition, the plan should provide opportunities to integrate Early College with Innovation and Career Pathway (ICP) programs, including by prioritizing existing ICP programs for hybrid/online Early College expansion.

Objective 3: Enroll middle-income students with the aim of providing more opportunities to learn in racially, ethnically, and economically-integrated settings, while furthering high school redesign in smaller school districts with modest resources.

Rationale:

- Early College is one of the few reliable tools that Massachusetts has at its disposal to increase racial, ethnic, and economic integration in its secondary schools. Early College also provides an efficient strategy to help many smaller rural and suburban communities redesign their high schools to give students a wider range of opportunities. Strategically expanding Early College to middle-income students will give all students in Massachusetts more opportunities to learn in integrated settings, accelerate the preparation of more workers for high-demand fields, and help maintain broad-based political support for the initiative.

- To ensure that Early College programs in Boston and the Gateway Cities are economically-integrated, Massachusetts will need to provide Early College to at least 15,000 middle-income students. .

Recommendation: The plan should include three core tactics to increase integration: (1) fostering the growth of strong programs in urban high schools to help cities attract and retain middle-income families, (2) creating regional partnerships that allow students from different high schools to learn side-by-side in college courses, and (3) building a discrete number of wall-to-wall Early College magnet schools that draw students from multiple districts to the state's largest cities. In addition, goals and key performance metrics must be carefully structured to encourage integration in Boston and the Gateway Cities.

Objective 4: Establish mechanisms for governance, accountability, and administration.

Rationale:

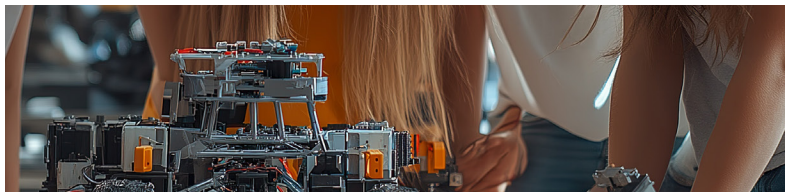
- Accelerating the growth of high-quality Early College programs that prepare students for the jobs of the future with career-connected learning and opportunities to learn alongside diverse peers will require governance, accountability, and administrative structures.

Recommendation: The Early College expansion plan can surface these needs and address some of them directly, but many will also require board-level policy decisions, legislation, and/or budget appropriations. The figure below summarizes the action steps the plan should seek to prioritize and the appropriate vehicle to advance them.

Summary of Actions Required to Enhance Early College Governance, Accountability, and Administration

	Action Step	Strategic Plan Item	Board-Level Policy Decision	Legislation	Budget
Governance	Codify vision for access, career connected learning, and economic-integration			✓	
	Create governing body with diverse representation			✓	
Accountability	Identify tasks, milestones, and responsible parties for state agencies	✓			
	Establish key performance metrics for redesignation	✓			
	Elevate college and career readiness in high school accountability		✓		
	Create incentives for public higher education			✓	✓
	Create incentives for students			✓	✓
Administration	Increase staffing				✓
	Enhance data and evaluation capacity				✓




I. INTRODUCTION

The daunting challenge long anticipated by economists has finally arrived: millions of college-educated boomers are entering retirement, and an increasingly large share of new labor market entrants face multiple barriers to success in higher education. States that find cost-effective ways to help their underserved high school students overcome obstacles to college completion will gain major competitive advantages. Before too long, they will have noticeably larger skilled workforces, more productive and economically secure residents, and less inequality.

Massachusetts seeks to gain these competitive advantages through various efforts to increase postsecondary educational access and persistence. Within this investment portfolio, Early College stands out for its ability to consistently deliver strong outcomes. The initiative's latest performance data are especially impressive. Over the past four years, Early College enrollment has grown from less than 3,000 students to more than 8,000. This growth spurt coincided with the COVID-19 pandemic, a particularly difficult period for underserved students and the urban schools that they disproportionately attend. But this does not appear to have impacted outcomes relative to the status quo.

New research published by the Annenberg Institute at Brown University shows that Early College continues to double the odds that Massachusetts students pursue postsecondary studies immediately after high school and persist for at least two years.[1] While all students benefit from Early College, low-income students see particularly large access gains, as illustrated in **Figure 1**. Postsecondary enrollment immediately after high school increases by 16 percentage points for low-income students, such that low-income Early College students are more likely to go on to college than their non-low-income peers who have similar academic profiles but did not attend Early College. Non-low-income students who participate in the program are also more likely to pursue postsecondary studies, but the outsized gains for low-income students mean there is just a 3-percentage-point difference in immediate postsecondary enrollment.

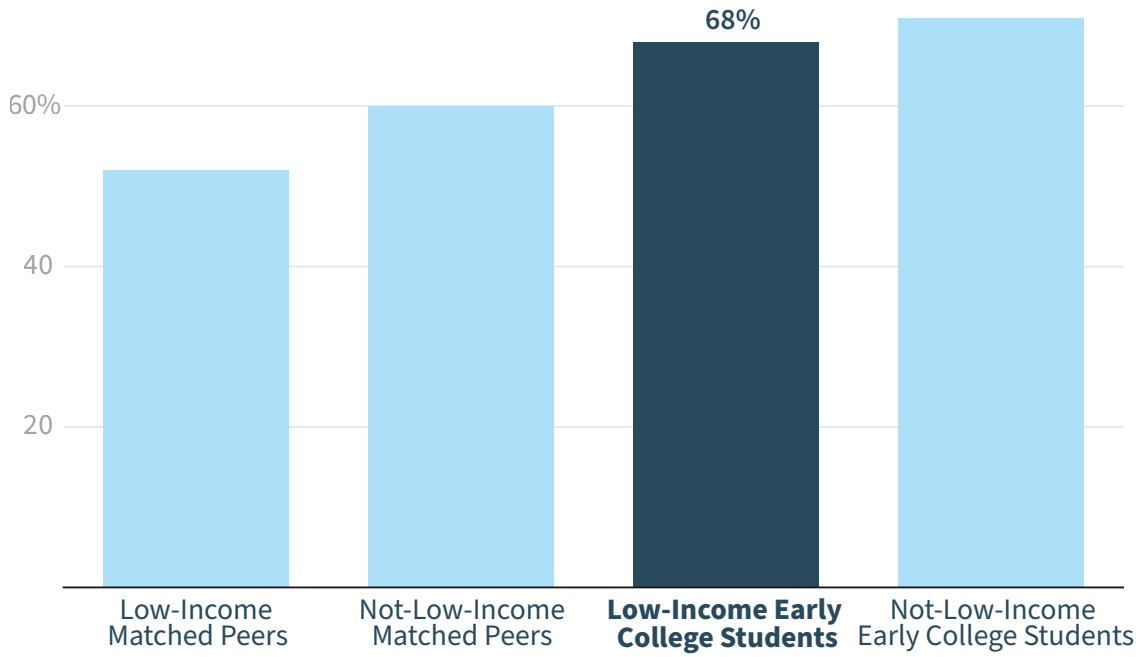
The impact that Early College is having in Massachusetts is extremely rare. Educational interventions backed by "gold standard" randomized controlled trials typically struggle to perform equally well when replicated and brought to scale.[2] Early College has avoided this fate because it can thrive in many different soils, as long as programs couple

opportunities to take a significant number of free college courses with intensive advising and student support. This potent combination increases the rigor of high school coursework, gives students a taste of success in challenging college-level classes, and builds momentum toward postsecondary degree completion.[3]

First-generation Early College high schools in other states deliver this formula primarily through a "wall-to-wall" design, in which stand-alone high schools are located directly on college campuses. While this format has advantages for operational efficiency, it can make expansion difficult. With steady and substantial support from the legislature, Massachusetts has helped to pioneer a more scalable approach by providing Early College to students predominantly through its existing portfolio of comprehensive high schools. This model presents some challenges, particularly around scheduling and transportation, but it can generate equally strong outcomes for students.[4] Massachusetts and several other states are now beginning to offer hybrid/online Early College at comprehensive high schools. Preliminary evidence suggests that this instructional format can also produce cost-effective benefits.[5]

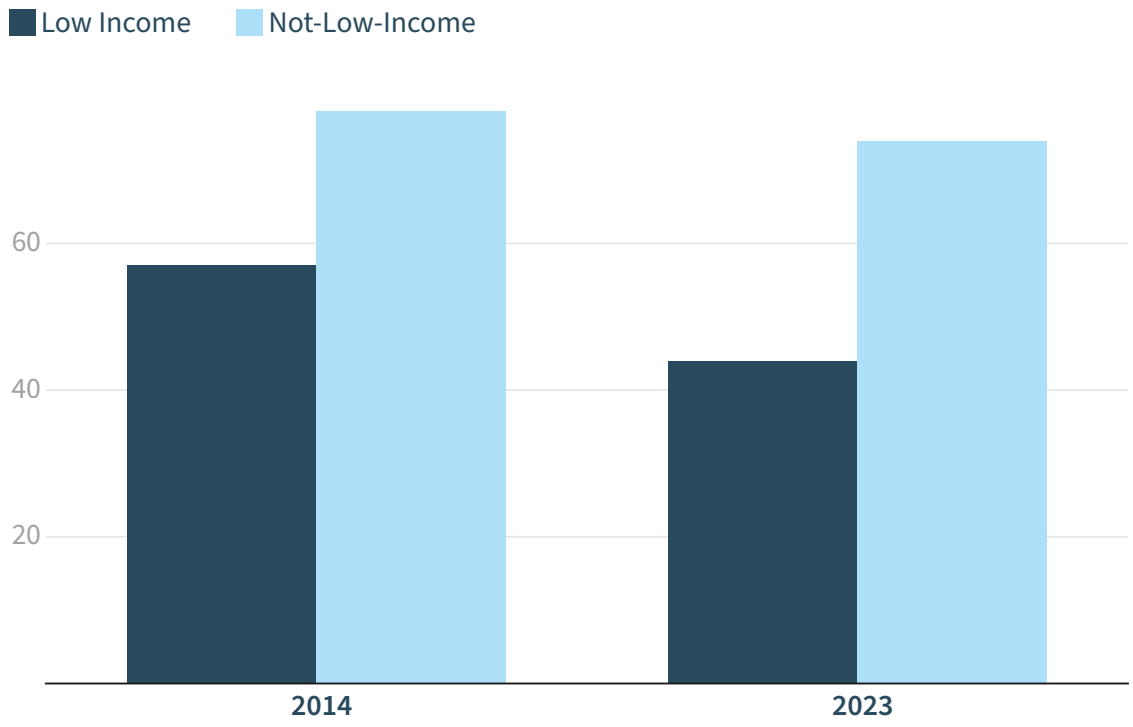
The adaptability of the Early College model means it has the potential to reach all of the underserved students in Massachusetts who could benefit from it. Providing universal access to Early College would dramatically shift the opportunity structure in Massachusetts, throwing open the doors to the jobs of the future for students who have long struggled to find their way to the most rewarding work in our advanced knowledge economy. We must recognize that the gap between the share of low-income and non-low-income students in Massachusetts matriculating to college immediately after high school has widened from 21 percentage points to 30 over the past decade (**Figure 2**). Recent increases to state financial aid will help more low-income students afford college, but they cannot address the many other barriers to college success. These investments increase the urgency to expand access to Early College so that more students are positioned to earn degrees with real labor market value.

Figure 1: Impact of Early College on College-Going Rate



Source: Pierre Lucien and others. "Effects of Early College on Educational Attainment for All in Massachusetts." *EdWorkingPaper No. 24-1087* (Providence, RI: Annenberg Institute for School Reform at Brown University, 2024).

Figure 2: Share of Massachusetts students enrolling in college immediately after high school



Source: Massachusetts Department of Elementary and Secondary Education

Despite media reports to the contrary, these degrees remain a prerequisite for most jobs that pay family-sustaining wages in Massachusetts. Census data show that 83 percent of men and 93 percent of women who earn enough to support a one-child household ($109,000 annually) in Massachusetts hold college degrees.[6] Providing Early College to far more low-income students is vital to positioning them to thrive in this high-cost state.

Interventions at the scale that Early College can reach will also be essential if Massachusetts wants to maintain the nation's most-skilled labor force. MassINC Policy Center (MPC) projections suggest that the state's workforce will have 200,000 fewer college-educated working-age members by the end of the decade.[7] Given Massachusetts' reliance on international migration, changes to federal immigration policy could lead to even steeper losses in the coming years.

A 2023 MPC study examining the potential of Early College health pathways demonstrates the impact that Early College can have on increasing the supply of skilled workers in key sectors. At full scale, the report estimated that Early College pathways could increase the number of health degree graduates from public colleges and universities in Massachusetts by 25 percent annually. A recent survey by the Center for Health Information and Analysis shows the job vacancy rate for nurses in Massachusetts is approaching 20 percent. Largely as a result, two-thirds of registered nurses are experiencing burnout, and one-third have left a job in the past year.[8] While mounting labor shortages are bringing the health care system to a point of crisis, there has been effort to make Early College part of the solution.

Seven years after the Department of Elementary and Secondary and Education and the Department of Higher Education came together to launch this strategic initiative, Early College is provided by just 60 high schools—which together serve less than 4 percent of low-income students in the state. Growth is slowing, and the current pace suggests that enrollment could top off at 6,500 low-income students. This trajectory would have Early College reaching fewer than 6 percent of the students who could most benefit from it (**Figure 3**). Bending the curve upward—

and fast enough to mitigate looming workforce challenges—will require an entirely new roadmap. Novel strategies are necessary to access low-income students in far more high schools and to draw a larger share of them into this challenging pathway.

Last June, the Board of Elementary and Secondary Education and the Board of Higher Education tasked the Massachusetts Early College Initiative (MECI) with developing an expansion strategy. This white paper proposes four objectives that a high-impact plan will address:

1. Provide universal access to all low-income students who could benefit from Early College.

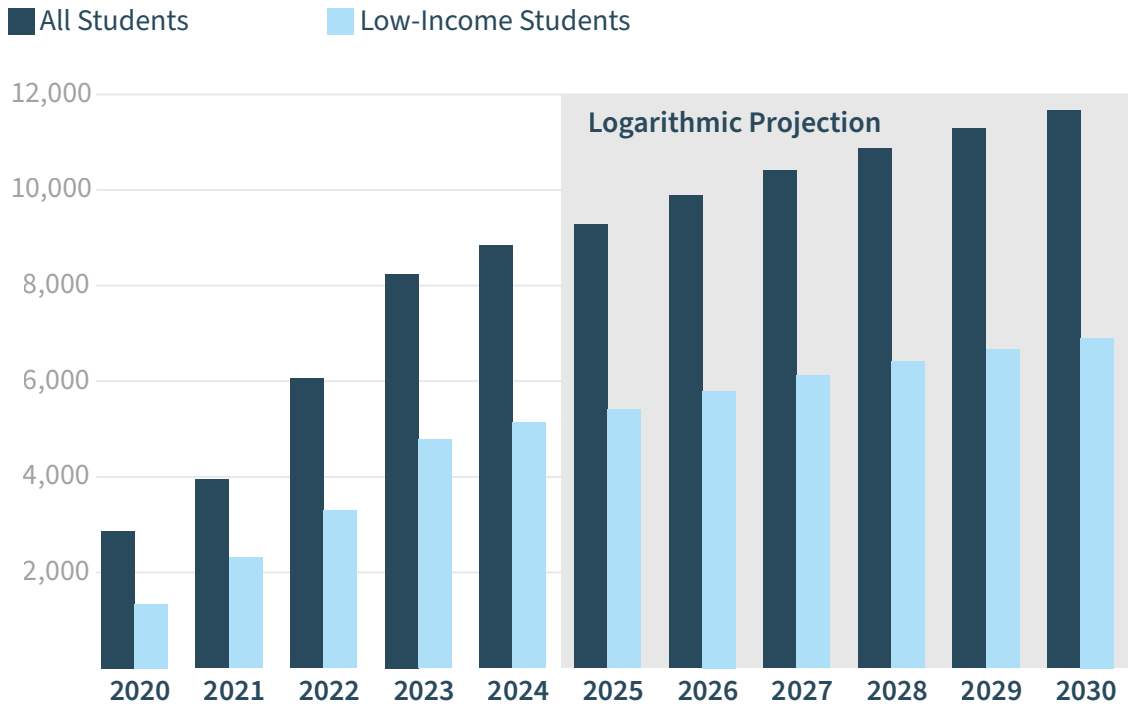
2. Integrate robust career pathways to draw more students to Early College and to prepare them for the full breadth of professional opportunities in the state's advanced industries.

3. Enroll middle-income students with the aim of providing more opportunities to learn in racially, ethnically, and economically-integrated settings, while furthering high school redesign in smaller school districts with modest resources.

4. Establish mechanisms for governance, accountability, and administration that are on par with the scale and strategic importance of this initiative.

The sections that follow dissect each of these objectives in turn, describing their rationale and providing in-depth analysis to help Early College leaders formulate a detailed strategy that advances these goals

Figure 3:Projected 2030 Early College enrollment in Massachusetts under current conditions for growth



Source: Author's analysis of data from the Massachusetts Department of Elementary and Secondary Education

How does Massachusetts Compare to Leading Early College States?

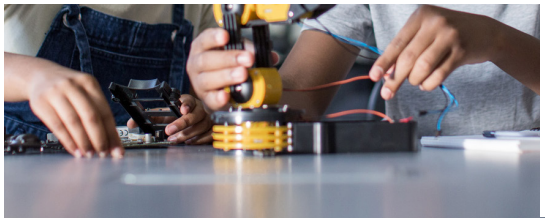
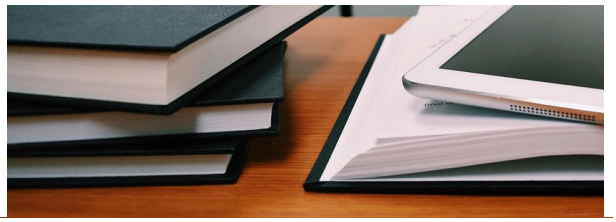
Several states have moved aggressively to provide Early College to as many underserved students as possible. When Massachusetts launched its statewide Early College initiative in 2017, it was far behind these leaders, but we have gained considerable ground. According to a survey administered by the American Institutes for Research, Massachusetts ranks fifth on the number of high schools offering the program. However, we are notably behind the leaders as measured by credit counts (**Figure 4**). In the top three states (Texas, Michigan, and North Carolina), almost every Early College high school offers students the opportunity to earn up to 60 college credits, whereas only 10 percent of Massachusetts programs allow students to complete up to two years of college. While far more programs in Massachusetts operate in comprehensive high schools, it is notable that programs located within comprehensive high schools in leading states have been able to implement 60-credit designs.

Figure 4: Top 10 states by number of Early College high schools

State	Rank	Total number of EC High Schools	Share of EC programs offering up to 60 credits	Share of EC programs in comprehensive high schools
1	TX	423	99	69
2	MI	180	99	81
3	NC	131	99	8
4	CA	64	76	23
5	MA	57	10	98
6	MN	51	97	94
7	NY	47	75	53
8	FL	45	79	53
9	IN	43	70	86
10	CO	40	100	68

Source: American Institutes for Research



OBJECTIVE 1.

PROVIDE UNIVERSAL ACCESS TO ALL LOW-INCOME STUDENTS WHO COULD BENEFIT FROM EARLY COLLEGE

With hybrid/online designs now providing an avenue to reach all of the underserved students who could benefit from Early College, offering universal access to this target population should be the state's ultimate goal. This section examines what this would mean in terms of total enrollment, hybrid/online vs. on-campus instruction, and the capacity of public colleges and universities to serve this number of students. The figures presented below provide rough order-of-magnitude estimates. They also offer examples of how the state's strategic planning effort can adopt a data-driven approach to the development of scale goals, drawing on the richer datasets available to them. This section focuses on establishing scale goals for the target population, while Section 3 will provide insights on how Massachusetts can work strategically to incorporate middle-income students into Early College programs.

A. Estimating Total Enrollment for the Target Population

The Massachusetts Early College Initiative (MECI) describes its target population as all students who are underrepresented in higher education, including students who are low-income, Black, Latino, English Learners, and students with disabilities. Due to data limitations, we estimate only the number of low-income students who could benefit from Early College and would likely opt to take advantage of the pathway, if they all were provided with the opportunity. Because low-income students are the largest group, and because there is considerable overlap across the categories, this method will produce a relatively accurate count of total enrollment for MECI's broader target population.

Estimating the Number of Low-Income Students Academically Prepared for Early College

Massachusetts high schools currently enroll approximately 120,000 low-income students. However, not all of these students would be well-served by Early College. Those far behind grade level, for instance, will have great difficulty in accelerating to college-level coursework. Massachusetts Comprehensive Assessment System (MCAS) test scores are the strongest measure of readiness for Early College that is publicly available for all school districts in Massachusetts, but they are an imperfect indicator: analysis shows that those with low standardized test scores often gain the most through Early College participation. However, students with low test scores are highly underrepresented in these programs. This indicates that those who successfully participate differ substantially from others with lower academic readiness as measured by the MCAS test.

In this regard, current Early College enrollment levels for students at each MCAS band can provide a basic proxy for Early College readiness among all low-income high school students in Massachusetts. Data show that 33 percent of low-income eighth graders statewide score at the not-meeting-expectations level, whereas only 8 percent of Early College students had scored at the not-meeting- expectations level when they took the MCAS test in eighth grade. This suggests that only about one-quarter of students not meeting expectations in eighth grade are likely to be prepared for the Early College pathway in high school. By this estimation method, a total of 92,000 low-income students could benefit from participating in Early College.[9]

It is important to emphasize that this estimation technique is used simply to establish a growth target. Early College programs in Massachusetts do not and should not use test scores to limit entry. Moreover, the state can certainly improve upon this estimation method by drawing on individual student data. For instance, it is likely that English Language Learners make up a significant share of the not-meeting-expectations students who ultimately succeed in Early College. With large numbers of students participating in Early College, it should be possible to use a combination of variables to develop more refined estimates of the size of the student population that could receive cost-effective benefits. A data-driven approach to establishing the size of the target population will allow strategic planners and program administrators to determine where these students are currently enrolled and various approaches to reach them. It will also provide benchmarks to gauge how much progress districts have made and to raise a red flag if schools are overenrolling and potentially causing harm by recruiting students who are not ready to accelerate to college coursework.

Estimating Achievable Participation Rates

While approximately 92,000 students may be well-served by participating in Early College, these students must choose to enroll. Participation rates for existing programs provide an indication of the share of academically ready low-income students who will opt into this challenging pathway. Mature Early College programs at comprehensive high schools in Massachusetts currently enroll around 30 percent of their academically prepared low-income students.[10] This take-up rate suggests that the state's Early College initiative should be structured to serve approximately 28,000 low-income students at full build-out.

Coincidentally, this figure is very close to the 30,000 low-income-student goal that the MassINC Policy Center put forward in a 2021 report.[11] Without any data to demonstrate how many students might actually be academically ready and interested in participating in Early College, the 30,000 target was based on simply aiming to serve one-quarter of all low-income students in Massachusetts.

B. Instructional Delivery Formats

Hybrid/online learning presents opportunities to reach far more additional students in suburbs and rural areas across the state. It also provides all programs with a tool to increase the depth and breadth of college coursework that students can complete. While the strategy should aim to position every program to take advantage of online learning, planners need a firm grasp of the share of students who will primarily participate online in order to build structures to serve these learners most effectively. To estimate growth targets for both hybrid/online and on-campus modalities, we examine the enrollment potential of each high school based on the number of students it serves in the target population and its proximity to the state's public colleges and universities.

Growth Targets for Primarily On-Campus Programs

Massachusetts currently has 229 secondary schools that are located within 5 miles (as the crow flies) of a public two- or four-year college campus. If all these schools offered Early College, and 30 percent of their academically prepared low-income students participated, they could enroll nearly 19,000 low-income students. This is more than two-thirds of the target population.

Examining the target population's distribution across high schools also provides an indication of how much additional growth can be achieved, both through programs current designations and through incremental expansion to other high schools that serve a large number of students in the target population.

According to the most recent data, 52 of the 229 schools (22 percent) within the aforementioned 5-mile radius have Early College designations, with a combined enrollment of 4,783 low-income students. Increasing take-up to 30 percent of academically ready low-income students would boost enrollment by approximately 3,500 students. Under these conditions, Massachusetts would reach nearly one in four students in the target population through schools with existing designations.

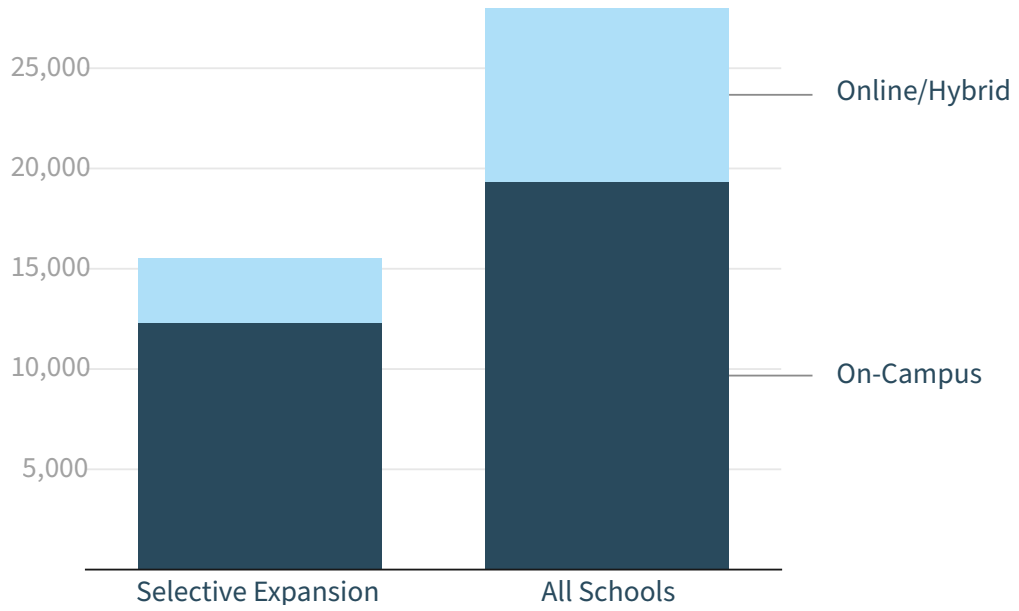
A strategy to selectively expand Early College to larger schools with below-average rates of college enrollment could further increase penetration. There are 67 high schools with more than 400 students and below-average college matriculation rates within the 5-mile radius. These high schools enroll 43 percent of the target population, or 12,000 low-income students. The most recent data show that 33 of these 67 schools have designations, and their combined Early College enrollment is just 3,350 low-income students.

Growth Targets for Primarily Hybrid/Online Programs

There are currently 171 high schools in Massachusetts located more than 5 miles from a public college or university. Together, they educate 8,600 low-income students who could benefit from Early College. A selective hybrid/online expansion approach would involve 37 schools with more than 400 students and below-average rates of immediate college enrollment. Together, these schools could reach 3,200 students in the target population.

These estimates assume that the 30 percent take-up rate is feasible for high schools that offer limited opportunities to learn on campus. It may be challenging to reach this level of participation with models that offer primarily online learning. However, the initial success of UMass's Commonwealth Collegiate Academy suggests there could be considerable appeal. UMass launched this virtual Early College in the fall of 2022. The program offers students the opportunity to earn up to 30 college credits. Currently, approximately 600 students participate across 17 high schools. UMass aims to grow enrollment to 2,000 students over the next five years.[12]

Figure 5: Estimated enrollment potential by delivery format



Source: Author's analysis of data from the Massachusetts Department of Elementary and Secondary Education

C. Campus Capacity Constraints

Early College expansion presents concerns about the capacity of campuses to accommodate a large number of high school students. This is an especially salient issue for community colleges, which have seen undergraduate enrollment increase by more than 40 percent over the past two years.

To evaluate this challenge, we take the target population estimates for the 5-mile radius (19,000) and assume that low-income students will represent 58 percent of total Early College enrollment, consistent with the current composition of programs. With these proportions, Early College programs could bring as many as 33,000 high school students to public college and university campuses at full build-out. Assigning students from each high school to the nearest public college or university campus shows that most institutions can accommodate this level of Early College expansion without great difficulty. Roxbury Community College is the only exception; its enrollment would more than double the institution's previous high. Springfield Technical Community College and Bristol Community College might also encounter some capacity constraints. While including students participating in online Early College significantly increases the instructional burden, most of these students would not necessarily enroll at the nearest campus, allowing programs to distribute enrollment to colleges and universities with greater capacity.

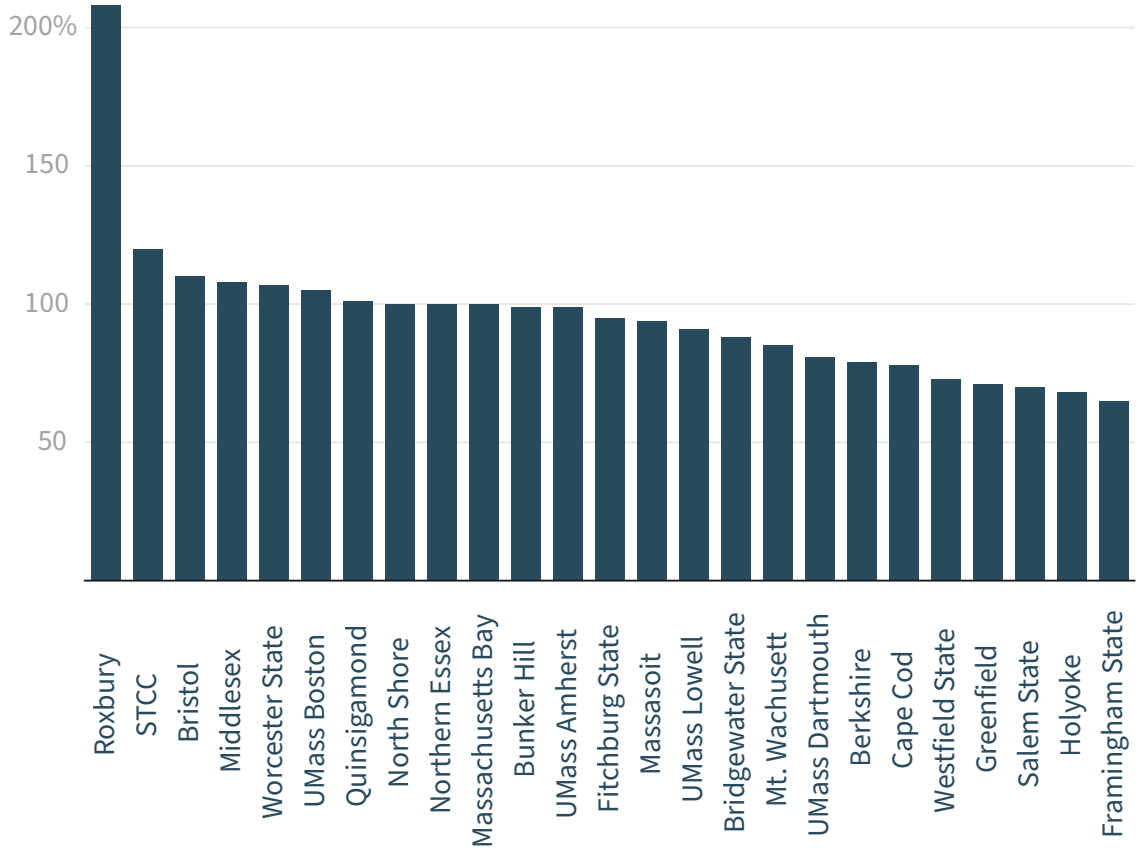
Accommodating this large number of high school students while maintaining a primarily college-age student body may also raise concern. At a full build-out of 33,000 high schoolers on campus, Early College students would make up 18 percent of enrollment across MECI's higher education partners. On a handful of campuses, they would account for as much as one-third of all undergraduate enrollment (Northern Essex, STCC, and Bristol). While the fact that only a fraction of these students will be on campus on any given day may mitigate this concern in regard to appearance and college culture, faculty on many campuses will need to teach far more high school students than they have previously. However, this stress test is in many ways conservative: Early College students have a light courseload during their first two years of high school, and some schools within the 5-mile boundary may opt for primarily online courses.

D. Setting a Reasonable and Achievable Scale Goal for the Target Population

In the near-term, Massachusetts can make considerable progress reaching the target population with a selective expansion strategy focused on high schools with more than 400 students and below-average college matriculation rates. High schools that meet these criteria within the 5-mile radius could serve 44 percent of students in the target population. Selective Early College hybrid/online expansion could reach another 11 percent of students in schools beyond the 5-mile boundary. Collectively, this incremental approach that employs both on-campus and online modalities could reach 55 percent of the target population, or more than 15,000 low-income students.

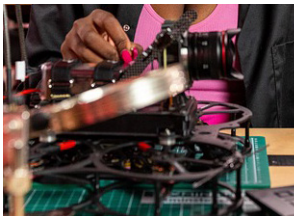
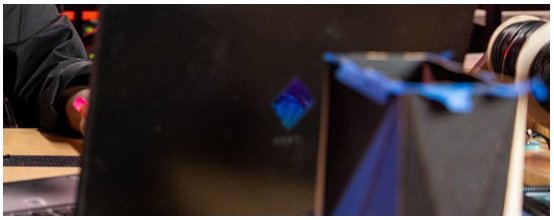
While this is triple the number of low-income students currently served by Early College in Massachusetts, it is an ambitious target, and achieving this level of growth would still offer Early College to just one-in-eight low-income high school students in the state. This reinforces the imperative to pursue approaches to program design and administration that will allow nearly all high schools to participate, opening the doors as wide as possible and as quickly as possible without sacrificing program quality.[13]

Figure 6: Maximum estimated Early College enrollment plus Fall 24' undergraduate enrollment as a share of institutional peak enrollment



Source: Author's analysis of data from the Massachusetts Department of Elementary and Secondary Education and the Massachusetts Department of Higher Education



OBJECTIVE 2.

INTEGRATE ROBUST CAREER PATHWAYS TO DRAW MORE STUDENTS TO EARLY COLLEGE AND PREPARE THEM FOR THE FULL BREADTH OF PROFESSIONAL OPPORTUNITIES IN THE STATE'S ADVANCED INDUSTRIES.

MassINC Policy Center research conducted over the past several years suggests that deepening career-connected learning is the number one strategy to both increase Early College enrollment and generate stronger outcomes for the students who participate.[14] Concerted effort to develop robust career pathways at scale is also key to engaging the business community and drawing significant private sector investment to the initiative. For students participating in online programs, belonging to a career pathway cohort and participating in meaningful career development opportunities will provide an important complement to virtual learning.

Among Early College practitioners in Massachusetts, there is widespread consensus that programs remain underdeveloped with respect to "academic pathways aligned with college and career" and "connections to career through workplace and experiential learning experiences"—two of the five design principles required for state designation. While most Early College programs in Massachusetts offer several career pathways, no quantitative data have been collected to monitor the progress of students who pursue them, and there has been only minimal qualitative evaluation of these pathways. Some program leaders report that they have had difficulty getting buy-in for more robust career pathways from state officials during the designation review process.

The strategic planning effort provides an opportunity to prioritize this critical component of Early College. In particular, planners should assess scale goals for pathways to high-demand fields, credit accumulation goals specific to each pathway, and the specialized career development and advising resources available to students within them.

A. Building Pathways to High-Demand Fields

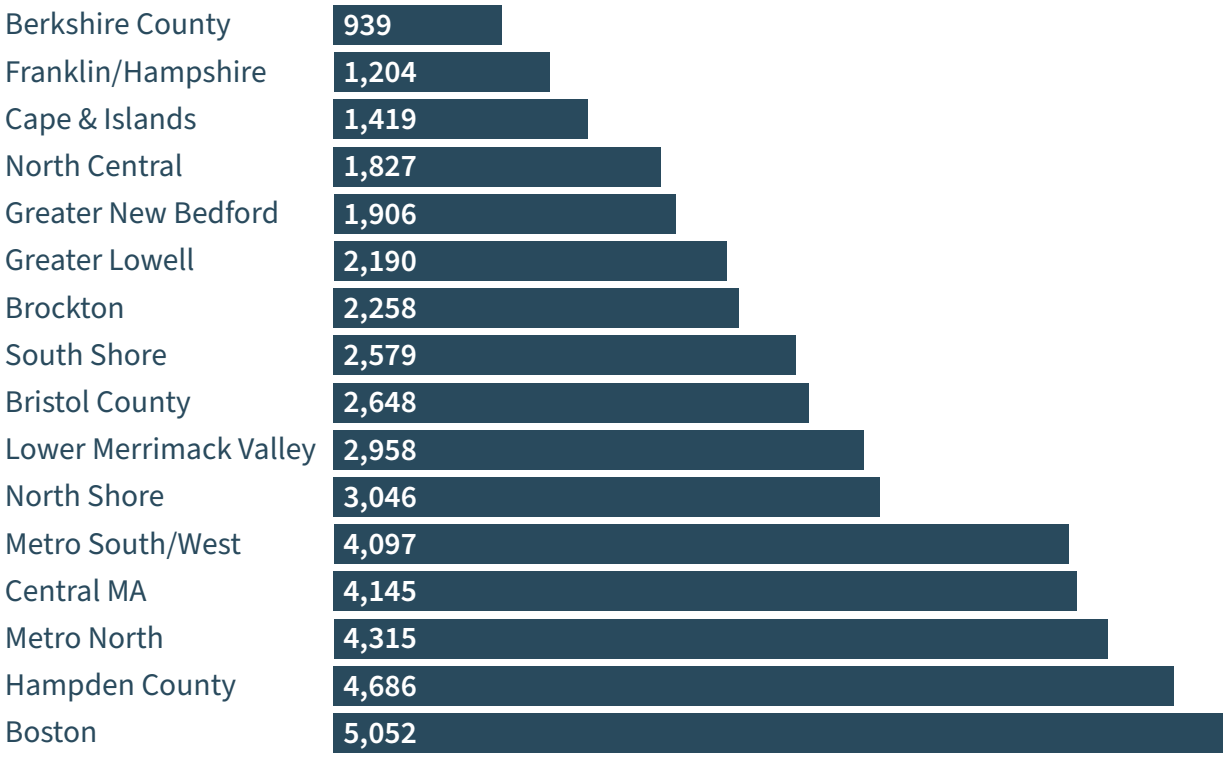
The strategic plan must include efforts to strengthen career pathways to high-demand fields. The focus should be on pathways that are well-suited to Early College because they either appeal to underrepresented high school students, require a post-secondary degree for entry into most occupations, have significant underrepresentation of low-income students and students of color, or have a high number of projected vacancies across the state.

In addition to identifying pathways for strategic focus, the plan should examine what it would mean to serve the projected number of students in each of these pathways. These scale figures will allow the relevant departments at each college and university to plan appropriately for expansion. Establishing growth targets for key pathways will also help Early College programs engage industry in long-term partnerships. And regional leaders will gain a better understanding of how Early College can further their economic development strategies.

Figure 7 provides an example of what Early College would look like at full build-out, reaching 48,000 students statewide (including 28,000 low-income students, who continue to represent 58 percent of total enrollment). In this scenario, the number of Early College students by workforce investment area would range from just under 1,000 in Berkshire County to just over 5,000 in Boston. At this scale, a popular pathway that served one-quarter of Early College students would need to accommodate 12,000 students statewide, including over 1,200 in Boston alone.

The plan should also reconsider the relationship between Early College and Innovation Career Pathways (ICP). Compared to ICP, new evidence suggests that Early College has twice the power to increase postsecondary educational access and persistence—and postsecondary degrees are a prerequisite for nearly all jobs in advanced industries today.[15] Many of the most impressive Early College programs in Massachusetts have blurred the lines between these two initiatives, providing students with maximal opportunities to develop career aspirations and accelerate their entry into their chosen professions. Strategic planners can look for opportunities to elevate this practice, including by prioritizing the expansion of hybrid/online Early College to strong ICP programs that lack proximity to public higher education campuses.

Figure 7: Estimated enrollment potential by Workforce Investment Area



Source: Author's analysis of data from the Massachusetts Department of Elementary and Secondary Education

B. Optimizing Credit Accumulation

The evidence-based Early College model calls for the provision of up to 60 credits, with the average student completing 30 college credits before high school graduation. Most leading Early College states have designed their programs with fidelity to this model. In Colorado, Michigan, Minnesota, North Carolina, and Texas, nearly all Early College programs provide students with the opportunity to earn up to 60 credits.

State designation in Massachusetts requires programs to provide a chance to earn at least 12 credits. While many programs in Massachusetts are currently structured to deliver this minimum, some offer more. For example, both Lawrence High and Salem High provide students with opportunities to complete at least 30 credits, while many students from New Heights Charter graduate with 60 credits and an associate degree.

At $180 per credit, the cost differential between a 12-credit program and a 60-credit program is nearly $9,000 per student. And this does not include transportation and academic support for additional college course-taking. If the higher dosage yields better outcomes in terms of completion and/or for progression to high-demand majors, it will likely generate a greater return on investment.[16] On the other hand, allowing students to complete a large number of credits may be inefficient if they choose to take courses that do not meet requirements for their eventual college majors, or if they earn associate degrees in low-return majors just to complete a degree while in high school.[17]

Building strong career pathways should help programs optimize, establishing credit accumulation goals that provide as much momentum as possible in a given field. For some fields, helping students complete as much coursework as possible may position them best for success. In others, tackling a smaller number of foundational courses may provide the greatest uplift. Tailoring credit accumulation goals to students' chosen fields will also help ensure that transferred credits meet major requirements at both public and private institutions within the region.

C. Career Development and Advising

Enhanced advising and career exploration and development experiences are integral components of Early College. As programs grow, each pathway will serve a large number of students across the state. This will provide economies of scale to improve the career development and advising experiences that students receive. The growth strategy can outline a process to work with intermediaries with the expertise to build more specialized advisory and career development services that can be shared across programs. From online coaching to virtual internships, the state can help improve the offerings available for students.

Building Early College pathways to scale creates other opportunities to efficiently provide unique offerings, such as a residential summer experience at UMass Chan Medical School or the UMass Mount Ida campus. Spending time with peers from across the state as well as industry leaders could provide a transformational experience for underserved youth, who are rarely afforded such opportunities.

In addition to outlining these opportunities, the plan can help identify funding sources to support these efforts. For example, workforce development funds could be leveraged to help Early College partnerships hire regional industry liaisons. Community colleges have long relied on industry liaisons to broker partnerships between their academic departments and regional employers. These dedicated industry liaisons provide a valuable contribution, facilitating exchange with industry on curriculum and pedagogy as well as working with local companies to develop internships, co-ops, and career exploration opportunities. By ensuring that Early College pathways provide robust experiences that align with the current needs of industry, state workforce development funds could generate additional return on investment.




OBJECTIVE 3.

ENROLL MIDDLE-INCOME STUDENTS WITH THE AIM OF PROVIDING MORE OPPORTUNITIES TO LEARN IN RACIALLY, ETHNICALLY, AND ECONOMICALLY-INTEGRATED SETTINGS, WHILE FURTHERING HIGH SCHOOL REDESIGN IN SMALLER SCHOOL DISTRICTS WITH MODEST RESOURCES.

Early College is one of the few reliable tools that Massachusetts has at its disposal to increase racial, ethnic, and economic integration in its secondary schools. MassINC Policy Center (MPC) research has drawn attention to the growing levels of economic segregation in the state's regional urban centers and to the implications that concentrating disadvantage has for student performance.[18] Starting with the 2013 Gateway Cities education vision, findings from MPC studies have also pointed to how growing school segregation reduces residential investment, curbing statewide housing production.[19] With rising levels of homelessness in Gateway Cities, the consequences of ignoring this important connection for far too long are increasingly apparent.

Many leaders believe that the limited resources available for Early College should be directed toward those facing the greatest barriers to access. However, this approach would result in building a separate pathway to and through college. Not only is separate rarely equal, but it denies students the opportunity to learn from those with diverse backgrounds. It is also important to recognize the fiscal pressures that many non-urban school districts face in Massachusetts. Early College provides an efficient strategy to help these rural and smaller suburban communities redesign their high schools, providing students with access to a wider range of opportunities and more individualized learning. Not only is this beneficial for these students and their schools, but it is also vital to accelerating the preparation of more workers in high-demand fields and to maintaining broad-based political support for the entire initiative.

The Early College strategy can accommodate expansion to middle-income students by prioritizing tactics and key performance metrics to further this fundamental objective.

A. Integration Tactics

The Massachusetts Early College Initiative (MECI) can work to promote integration by using three core tactics: (1) fostering the growth of strong programs at comprehensive urban high schools to help cities attract and retain

middle-income families, (2) creating regional partnerships that allow students from different high schools to learn side-by-side in college courses, and (3) building wall-to-wall Early College magnet schools that draw students from multiple districts.

Early College High Schools within Comprehensive High Schools

Most Gateway Cities rely on a single urban high school. Creating strong Early College programs within these high schools will help attract and retain middle-income families. To achieve this goal, Early College partnerships must proactively engage these families and ensure that the experience meets their needs as well as the needs of low-income, first-generation college-going students. This is often difficult to achieve, which is why it is especially important that MECI values and supports these efforts.

Regional Partnerships

Regional partnerships that allow suburban high schools located near public colleges and universities to participate will open the doors to Early College for low-income students enrolled in these districts. Equally important, these partnerships will draw more middle-income students into these programs. Public colleges and universities can play an important role in fostering integration by providing administrative support to help smaller suburban districts enter these partnerships, as well as by intentionally working to give students from urban and suburban districts opportunities to learn alongside one another within course sections. These learning experiences will give all students better preparation for the diverse colleges and workplaces they will soon enter.

Early College Magnet Schools

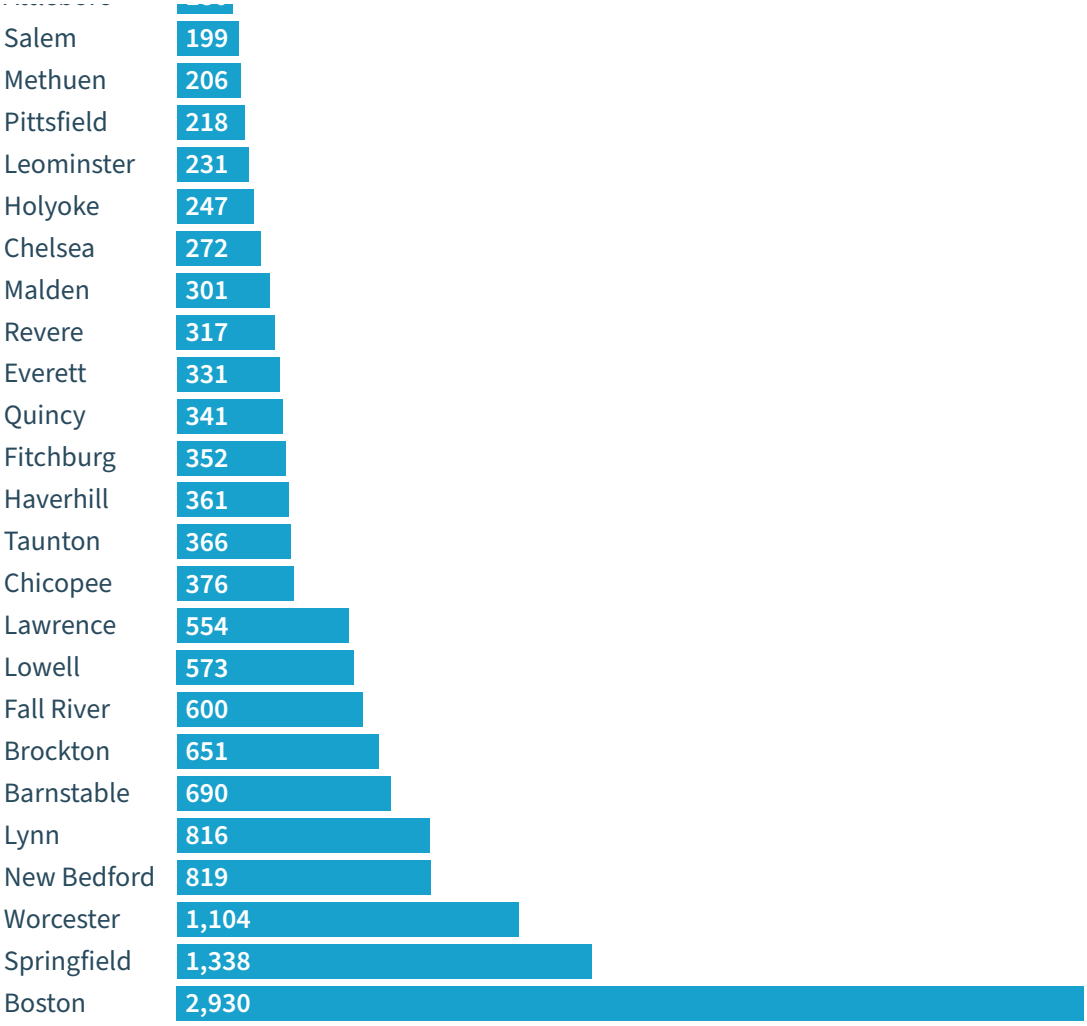
In limited instances, Massachusetts could create wall-to-wall Early College high schools to bring suburban students into urban districts, increasing the pool of non-low-income students so that more students in the city have an opportunity to learn in an integrated setting. This approach should work especially well for career-themed high schools that offer unique learning opportunities. The key will be to limit the impact on enrollment at comprehensive high schools in urban districts by primarily locating these new magnet schools in the state's largest urban districts.

B. Scale Goals and Key Performance Metrics

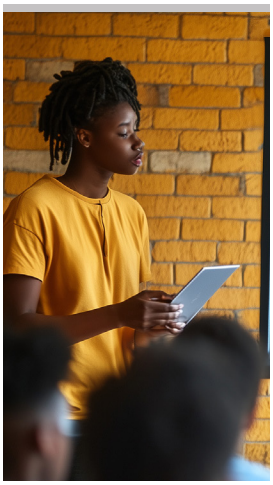
If the prime objective is serving the 28,000 low-income students in the target population, Massachusetts could base its overall expansion goal on the number of middle-income students required to ensure that students have the opportunity to learn in economically-integrated programs. **Figure 8** shows the number of additional students required to ensure that middle-income students make up at least half of enrollment in Boston and the Gateway Cities. In Boston, just under 3,000 middle-income students would be needed. For the 26 Gateway Cities combined, middle-income enrollment would need to total around 12,000 students. Serving all 28,000 low-income students in the target population, along with the roughly 15,000 middle-income students in Boston and the Gateway Cities, would bring the total Early College enrollment up to 43,000 students statewide.

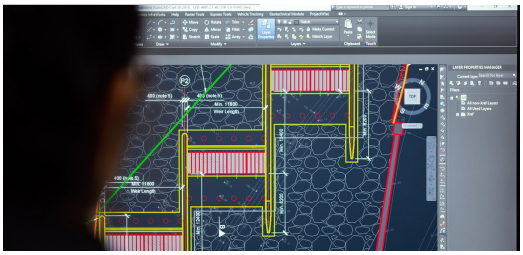
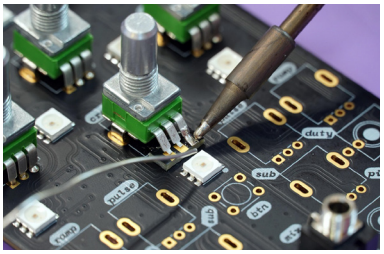
The strategic plan must be particularly thoughtful about the key performance metrics it puts forward to ensure that communities are scaling equitably, while also promoting economic integration. If low-income students make up a smaller percentage of Early College students than their share of enrollment in a high school, this would indicate that they are underrepresented in Early College. However, this will be the case if the initiative succeeds in promoting integration. Programs should be held accountable for both drawing a mix of students and ensuring that take-up among the target population moves toward the 30 percent goal (or whichever participation metric the strategic plan ultimately establishes).

Figure 8: Number of middle-income students required for economically-integrated Early College programs at maximum low-income enrollment



Source: Author's analysis of data from the Massachusetts Department of Elementary and Secondary Education




OBJECTIVE 4.

ESTABLISH MECHANISMS FOR GOVERNANCE, ACCOUNTABILITY, AND ADMINISTRATION

Massachusetts needs to enhance the Early College initiative's governance, accountability, and administrative structures to significantly expand access to high-quality programs that prepare students for the jobs of the future with career-connected learning and opportunities to study alongside diverse peers. While the plan can put forward strategies to develop these structures, implementing some of them will require legislation. And more systemic investments and policy change will also be necessary to ensure that the Early College accountability and incentive structure aligns with other strategic efforts to prepare Massachusetts students for postsecondary education and training. In this regard, the Early College expansion plan is timely. Leaders on Beacon Hill are grappling with education accountability, high school graduation requirements, and investments to expand access to educational opportunity in Massachusetts. This final section places Early College governance, accountability, and administration in this wider context and offers guidance to legislators and other education policymakers grappling with these interrelated challenges.

A. Governance

To coordinate governance of the Massachusetts Early College Initiative across two departments, the Board of Elementary and Secondary Education and the Board of Higher Education created the Early College Joint Committee (ECJC) in 2017. This structure has been effective, but the initiative requires a stronger foundation to support its growth.

In North Carolina, Texas, and other leading states, Early College is defined in legislation. This gives governing boards direction and a programmatic framework to guide their oversight of the initiative. A statutory foundation also helps maintain long-term focus through the inevitable changes in leadership. Representatives Jeffrey Roy and Kate Lipper-Garabedian and Senator Brendan Crighton have been working on a College in High School bill to support the growth of Early College. With the benefit of a clear strategic plan, legislators can refine and pass this important bill.

At a minimum, a strong governance statute should codify the three high-level objectives outlined in this white paper: extending access to all, providing career-connected learning, and increasing economic integration. The legislation should also constitute a governing board with broad representation to ensure that the many stakeholders essential to success have a voice in deliberations. In addition to members of the boards of elementary and secondary

education and higher education, the governing body should include legislators, and leaders from labor, industry, nonprofit, and community-based organizations.

B. Accountability

The strategic plan should detail mechanisms to create accountability for performance at both the state and program levels.

At the state level, accountability will come from the production of the plan itself. Maine's strategic plan provides a model. The document transparently details the various activities the state will undertake to scale high-quality Early College programs, the parties responsible for each action item, and the metrics that will be used to monitor progress. Massachusetts can borrow from this template.[20]

At the local level, accountability should come from the designation framework, which determines eligibility for state funding. The Massachusetts Early College Initiative has established a robust designation process, and its leaders have said that the strategic plan will identify outcome measures for redesignation. In addition to ensuring that programs are increasing post-secondary enrollment and completion, these outcome measures should further the three high-level objectives outlined in this white paper. For example, calculating the share of low-income students who could benefit from Early College that are participating in each high school is one way to measure success in expanding access to the target population. The number of credits completed in the field of study for each pathway is a clear measure of career-connected learning. For each program, the initiative should also be able to measure the share of credits earned in courses with economically-integrated enrollment.

More broadly, the strategic plan must call attention to the need to build a high school accountability regime that incentivizes investments in Early College. The Department of Elementary and Secondary Education (DESE) is in the process of reviewing high school performance measures.[21] The current emphasis of state accountability in Massachusetts is on 10th grade standardized test scores, high school graduation rates, and attendance. In essence, high schools are rated on their ability to get all students over a low bar. Only limited attention is given to preparing students to meet the actual demands of most jobs that provide family-sustaining wages in today's economy. Redesigning comprehensive high schools to provide strong Early College pathways is a difficult and resource-intensive undertaking. By not measuring the product of these efforts, state accountability policy signals that this work is not valued.

Advocates for stronger college and career readiness measures in high school accountability have struggled to gain traction for years, but this issue has taken on even greater significance now that passing MCAS scores are no longer required for a high school diploma. Massachusetts is under pressure to quickly find new and better methods to determine whether students are prepared to participate fully in the economy and society. The completion of significant Early College coursework is one way to measure students' competency and high schools' performance in preparing students for postsecondary success.

Massachusetts also needs to consider the accountability and incentive structure that state policies create for public higher education. With free community college, students may be more interested in pursuing Early College. This synergy would help ensure that those tapping into more generous financial aid have the preparation necessary to succeed in postsecondary studies. But community colleges struggling to manage growing enrollments need incentives to serve these high school students. In contrast to a growing number of states, Massachusetts has no formal structures to provide these incentives. Strategic planners must also recognize that there is a real risk that high school students will see free community college as a reason not to make the additional effort that Early College requires. If this occurs, the state's investments in free community college will produce less-than-optimal returns.

The Massachusetts strategic plan must grapple with these issues and put forward solutions. For instance, the state could offer more generous financial aid to low-income Early College students who build on their momentum by continuing their studies at a public college or university full-time.

C. Administration

With only a handful of staff, Massachusetts is clearly struggling to meet the demand for growth while supporting the 60 high schools currently offering Early College while also meeting the demand for growth. In the most recent designation cycle (which opened in May 2024), 16 applications did not make it past the initial stage, including 18 that had received planning grants and six with even larger incubator grants. Another 20 have moved onto the more intensive Part B application, but the volume of applications submitted has forced the team to extend the approval process to June. This leaves programs with little time to properly recruit students and launch in the fall. While there were fewer applicants in the previous designation cycle, more programs (six) received rejections or withdrew their applications than received approval (five).

The initiative clearly requires more staffing to partner effectively with school districts to help them navigate the application process and get programs up and running in a more timely and predictable manner. In the future, the initiative will also need to manage both the redesignation process and efforts to overhaul low-performing programs. The strategic plan presents an opportunity to catalog the administrative resources necessary to accomplish these tasks.

Data and evaluation capacity are also central to effective program administration. DESE and the Department of Higher Education have conscientiously partnered to improve data collection and data quality. They have put considerable effort into developing an Early College dashboard that provides timely access to valuable information at the program level. However, there is an urgent need to better understand how students are benefiting across these programs, as well as how differing approaches that programs have employed to date have impacted costs and outcomes.

The strategic plan should outline an evaluation strategy commensurate with the level of investment that Massachusetts is committing to this initiative. Other states provide valuable models, with several having enhanced research efforts by delegating the work to centers within their public university systems. For example, the University of North Carolina at Greensboro hosts an Early College research center, while the University of Hawaii facilitates data exchanges across five state agencies to track long-term outcomes. In recent years, Massachusetts has built strong research-practice partnerships with skilled evaluators, including the Annenberg Institute at Brown University, Boston University's Wheelock Educational Policy Center, and the Center for Analysis of Longitudinal Data in Education Research. Bringing objective partners like these into the evaluation effort could help ensure that this major initiative delivers fully on its promise.

Figure 9: Summary of Actions Required to Enhance Early College Governance, Accountability, and Administration

	Action Step	Strategic Plan Item	Board-Level Policy Decision	Legislation	Budget
Governance	Codify vision for access, career connected learning, and economic-integration			✓	
	Create governing body with diverse representation			✓	
Accountability	Identify tasks, milestones, and responsible parties for state agencies	✓			
	Establish key performance metrics for redesignation	✓			
	Elevate college and career readiness in high school accountability		✓		
	Create incentives for public higher education			✓	✓
	Create incentives for students			✓	✓
Administration	Increase staffing				✓
	Enhance data and evaluation capacity				✓

Aligning the Early College Strategy with State Accountability Policy

Many states have years of experience with accountability structures that put far more emphasis on college and career readiness. Research suggests that, on average, states base 10 to 20 percent of a high school's ranking on college and career readiness measures.[22] By comparison, Massachusetts lags well behind, giving just 5 percent of scoring weight to the share of students who take one or more advanced courses.

Stronger examples include Georgia, which bases 15 percent of a high school's evaluation rating on its College and Career Readiness measure. This item includes six ways that students can demonstrate readiness, including scoring 3 or higher on at least two AP tests, earning a nationally recognized industry credential, or entering the Technical College System of Georgia or the University System of Georgia without needing remedial coursework. Texas places 30 percent of the weight on an assortment of college and career readiness measures, including the number of students graduating from high school with an associate degree. Vermont's formula puts 10 percent of the weight on "Post-Graduate Outcomes," an indicator that counts students who enroll in college or trade school, enlist in the military, or enter employment no later than 16 months after high school graduation.

The Hawai'i Data eXchange Partnership

The Hawai'i Data eXchange Partnership, a partnership of five Hawai'i state agencies (including the Department of Education), centralizes Hawai'i data under the University of Hawai'i. As a result, in Hawai'i, where approximately 9 percent of all high school students participate in some form of Early College, data are readily available in publicly downloadable formats. The data are managed and published by the University of Hawai'i, ensuring consistency and transparency in the types of data reported. Hawai'i reports annual Early College enrollment, including by school and subgroup, as well as postsecondary enrollment rates for participants from each program by subgroup.

Further, the Hawai'i Data eXchange Partnership hosts an annual data summit, which incorporates sessions on Early College performance, bringing together practitioners, state and local administrators, and third parties. Hawaii's summits have helped the state identify opportunities to strengthen Early College outcomes by, for example, determining differences in student performance across modalities (e.g., asynchronous vs. in-person courses).

NOTES

1. "Pierre Lucien and others. "Effects of Early College on Educational Attainment for All in Massachusetts." *EdWorkingPaper No. 24-1087* (Providence, RI: Annenberg Institute for School Reform at Brown University, 2024).

2. James Kim. "Making Every Study Count: Learning from Replication Failure to Improve Intervention Research." *Educational Researcher* 48.9 (2019).

3. Julie Edmunds and others. "The Impact of Early Colleges on Postsecondary Performance and Completion." *AERA Open* 10 (2024).

4. Pierre Lucien and others. (2024).

5. Pauline Younts. *Virtual Early College High Schools: An Exploratory Case Study*. (Washington, DC: The George Washington University, 2016). There is also descriptive evidence reported by Hawaii's Leeward Community College, where 58 percent of Early College students taking classes in-person received A's, compared to 48 percent in asynchronous courses, 53 percent in synchronous courses, and 43 percent in hybrid courses. See: https://drive.google.com/file/d/19_p5PEvxyMTBnbRwtdvXGKcasc6eDB5q/view (accessed on November 6, 2024).

6. Authors' analysis of data from the 2023 American Community Survey Public Use Microdata Sample.

7. Ben Forman and Simone Ngongi-Lukula. "Sizing Up Massachusetts' Looming Skilled-Worker Shortage." (Boston, MA: MassINC, 2022).

8. See: https://www.chiamass.gov/massachusetts-healthcare-workforce-survey#dashboard.

9. This estimate assumes 24 percent of the low-income students scoring at the not-meeting-expectations level would make good candidates for Early College based on the current ratio of not-meeting-expectations students in Early College to all low-income students (8 percent of Early College students and 33 percent of total low-income eighth grade math MCAS test-takers).

10. This 30-percent benchmark is the average across programs with top decile take-up rates, excluding those with wall-to-wall designs. We define their low-income academically prepared population based on 10th grade math MCAS results. However, the Early College enrollment shares by MCAS level previously reported are based on eighth grade scores, and more students score at the meeting or exceeding expectations level on the 10th grade exam. We adjust accordingly by increasing the share of students in each school who are not meeting expectations by 10 percentage points (the difference between the share of low-income students not meeting expectations between the eighth and 10th grade math MCAS exams in 2024). We then calculate the take-up rate by including only one-quarter of this not-meeting-expectations population in the low-income student denominator for each school. This provides an estimate of the share of students who are academically prepared based on the current make-up of enrollment by MCAS performance in Massachusetts Early College programs.

11. See: Ben Forman and Simone Ngongi-Lukula. "Early College as a Force for Equity in the Post-Pandemic Era." (Boston, MA: MassINC, 2021).

12. https://www.massachusetts.edu/news/umass-plans-triple-early-college-enrollment-over-next-five-years-giving-2000-high-school (accessed on November 6, 2024).

13. It is worth noting that a selective approach that did not include vocational schools would reduce penetration from 55 percent of low-income students in the target population to just 42 percent, as these schools hold a significant share of the state's low-income students attending large high schools. Low-income students at vocational schools are 10 percentage points less likely to matriculate to college than their peers. While this is much smaller than the gap statewide, it will likely widen with changes to vocational school admissions policies.

14. See: Ben Forman and Simone Ngongi-Lukula. "Early College as a Scalable Solution to the Looming Workforce Crisis." (Boston, MA: MassINC, 2023); Ben Forman and Simone Ngongi-Lukula. "Tapping the Power of Health Pathways in Early College High Schools."(Boston, MA: MassINC, 2023); "Early College Life Sciences Pathways: Opening Doors to the Jobs of the Future." (Boston, MA: MassINC, 2025).

15. Pierre Lucien and others. "Do Innovative Career Pathways in Massachusetts High Schools Promote Equitable Access to Higher Education?" *EdWorkingPaper No. 24-1066*. (Providence, RI: Annenberg Institute for School Reform at Brown University, 2024).

16. DPrior MassINC Policy Center research shows an associate degree completion yields $28,000 in benefits for the state, on average, but there is minimal return on state investment when students who take community college courses either do not complete a postsecondary degree at all or complete a low-return major such as a general studies associate degree (without transfer to a four-year institution). See: Ben Forman and Simone Ngongi-Lukula. “Investing in Success: Findings From a Cost–Benefit Analysis of Massachusetts Community Colleges.” (Boston, MA: MassINC, 2022).

17. New evidence suggests the high-credit programs in North Carolina lead to efficiency in that students do not switch majors as often and do not complete dual majors more frequently. On the other hand, there is evidence that some who earn four-year degrees also complete associate degrees that they would not otherwise attempt. See: Edmunds and others. (2024).

18. Ben Forman and Simone Ngongi-Lukula. “Choosing Integration: A Discussion Paper and Policy Primer.” (Boston, MA: MassINC, 2022).

19. Ben Forman and others. “The Gateway Cities Vision for Dynamic Community-Wide Learning Systems.” Boston, MA: MassINC, 2013).

20. See: https://www.maine.edu/early-college/strategic-plan-2021-2026/.

21. See: https://www.doe.mass.edu/accountability/lists-tools/accountability-review-report.pdf.

22. “Making Readiness Count 3.0.” (Silver Spring, MD: Advance CTE, 2019).

MassINC
Policy Center

Massachusetts Institute for a New Commonwealth
11 Beacon Street
Suite 500
Boston, MA 02108
massinc.org