Cradle-to-Career

SYSTEM

Cradle-to-Career Data System: Report to the Legislature

September 2022

Contents

Section 1: Background

In 2021, legislation authorized the creation of the Office of Cradle-to-Career Data (C2C) within the Government Operations Agency (GovOps). The legislation also authorized the creation of a 21-member Governing Board and two advisory boards and detailed specific implementation goals for the data system.

This report documents the progress made during 2021–22, the first year of C2C implementation, benchmarked against the intentions laid out in the authorizing legislation (see Appendix A for a progress summary based on the legislation).

The first year of implementation prioritized continuity with the vision and plans defined during the C2C planning process.

In 2019, the California Legislature authorized an 18-month planning process for the state's Cradle-to-Career Data System. The process led to detailed implementation recommendations, generated with the insights and expertise of more than 200 people drawn from the partner entities—state agencies and interest holders identified in the authorizing legislation—and the intended users of the data system.

The planning process yielded a unique model for a state data system, which deploys a three-pronged approach:

- community engagement to inform development, interpretation, and awareness building about available information
- tools to support college planning and transition
- an analytical data set on education and job outcomes

This approach recognizes that students and teachers need different types of information than researchers and policy analysts and that community members can be outreach partners, co-interpreters, and users of information that the data system produces. In addition, to better equip users to understand equity gaps in context, the system integrates educational data with information on social services, financial aid, workforce training, and employment. The broader data set means that solutions are more likely to focus on structural factors that can be addressed through changes to practice, policies, and investments, rather than focusing narrowly on student characteristics.

Cradle-to-Career Data System 2021–22 Accomplishments

Governance

- Seated 21-member Governing Board
- Selected 32 public members for two advisory boards
- Developed a governance manual
- Secured signatures from all data providers on a Participation Agreement
- Approved the 2022–23 work plan and budget

Operations

- Established the Office of Cradle-to-Career Data, including developing core policies and ensuring integration with the GovOps
- Selected an executive director; established a staff leadership structure; and hired eight staff, including the executive team

Community Engagement

- Launched monthly Community Conversations to engage interest holders
- Provided interviews and presentations about the data system

CaliforniaColleges.edu Progress to Support College Planning and Transition

- Expanded access to free tools on CaliforniaColleges.edu to 35 additional districts, so the number of students with accounts now totals more than one million
- Improved technical linkages to increase frequency of data exchanges with the California Student Aid Commission (CSAC) to support completion of financial aid applications
- Worked with the University of California (UC) to define the necessary improvements to the database that is used to validate A-G course accuracy, increase frequency of data exchanges, and enhance integration with the UC application
- Worked with the California Department of Education (the CDE) on a legal framework to create free college and career planning accounts for all K–12 students
- Developed communications plans about access to free tools

Technology Infrastructure for the Analytical Data Set

- Completed Stages 1, 2, and 3 of the Project Approval Lifecycle (PAL) process for technology tools necessary to build the analytical data set
- Selected technology tools for the analytical data set and released a request for proposals (RFP) to procure a solutions provider
- Documented data definitions for the development of initial dashboards

Section 2: Governance

Governing Board

The authorizing legislation outlined the composition of the C2C Governing Board, which includes Governor's Office, State Senate, and Assembly appointees; data provider designees; and representatives from the Association of Independent California Colleges and Universities and California School Information Systems. Appointments were finalized in October 2021, and the first Governing Board meeting was held the following month.

The Governing Board met four times during the 2021–22 fiscal year, as required in statute, and again in August 2022. During these meetings, the board accomplished the following:

- selected a board chair and a board chair-elect
- interviewed finalist candidates and hired an executive director
- established an ad hoc committee that developed a governance manual and then adopted that governance manual
- adopted a conflict-of-interest policy
- established an ad hoc committee that reviewed applications and recommended candidates for the Community Engagement Advisory Board and the Data and Tools Advisory Board and then adopted the recommendations
- created an ad hoc committee that developed a process for reviewing the executive director, adopted the process, and then established the committee that will conduct the first review of the executive director
- heard from students and practitioners about the impact of tools provided through CaliforniaColleges.edu to support college planning and transition
- reviewed and approved the work plan for 2022–23, a revised five-year implementation timeline, and a budget change concept request for 2023–24

Advisory Boards

The authorizing legislation established that the data system would have two advisory boards to provide input and feedback and to make recommendations to the Governing Board:

- The Data and Tools Advisory Board examines whether the data system is providing actionable information and identifying ways to improve access to that information.
- The Community Engagement Advisory Board examines whether C2C is creating strong feedback loops with data users, supporting evidence-based decision-making and analytical capacity, and ensuring equitable access to actionable information.

Advisory board members are drawn from the end users of C2C, including practitioners, families, students, adult learners and workers, community organization staff, research organization staff, and advocacy organization staff. More than 90 individuals applied for the total of 32 advisory board positions.

An ad hoc committee made up of nine Governing Board members reviewed the applications, scored them against a rubric, and then discussed the candidates in a public meeting. When the slate was brought to the full Governing Board, there was extensive public comment indicating broad support for the candidates, noting their depth of experience with relevant data and community engagement. In their discussion, the Governing Board members identified process improvements that will help to ensure the ongoing alignment of expertise related to development and outreach activities.

The advisory boards are scheduled to be seated in September 2022.

Participation Agreement

The authorizing legislation specified that a Participation Agreement would establish the data points that data providers must contribute to the data system on an annual basis. During the planning process for the C2C, legal counsel from the data providers had drafted an agreement but had not finalized it due to concerns about data security. During year one of implementation, C2C legal counsel worked with the data providers to develop a final draft, which was then signed by all 16 data providers.[1] The updated agreement ensures that the data system will comply with all laws, safeguard privacy, and indemnify data providers in the case of a breach while putting in place the safeguards that will help to ensure that C2C receives the information necessary to create the analytical data set.[2]

---

[1] The entities signing the Participation Agreement included the following: Association of Independent California Colleges and Universities, Bureau for Private Postsecondary Education, California Community Colleges Chancellor's Office, the CDE, California Health and Human Services Agency, California State University, California School Information Services, CSAC, California Labor and Workforce Development Agency, Department of Industrial Relations, Commission on Teacher Credentialing, Department of Health Care Services, Department of Social Services, Employment Development Department, Office of Cradle-to-Career Data, and University of California.

[2] This accomplishment was highlighted by the Governor's Office in a press release: www.gov.ca.gov/2022/05/12/californias-cradle-to-career-data-system-achieves-early-milestones-announces-multi-agency-data-sharing-agreement/

Revised Five-Year Plan

During the planning process, the Cradle-to-Career Workgroup recommended specific activities that should occur in the first five years of developing the data system. However, this timeline was impacted by delays in seating the Governing Board, time needed to hire staff and establish the Office of Cradle-to-Career Data (see Section 3: Operations), and additional planning requirements that were added to the authorizing legislation (see Section 6: Technology Infrastructure for the Analytical Data Set). Therefore, the Governing Board reviewed and approved a revised five-year timeline that provides a compressed and ambitious phasing in of various components of the data system in the remaining 4 years (see Exhibit 1 on the following page).

Exhibit 1: C2C Revised Five-Year Plan

	Year 1	Year 2: FY 2022–23	Year 3: FY 2023–24	Year 4: FY 2024–25	Year 5: FY 2025–26
Strategy and Operations	• Seated Governing Board • Signed legal agreements • Appointed Executive Director • Defined leadership positions & initial staff recruitment	• Recruit leadership and build staff team • Secure and prepare physical space for office and community engagement • Define brand identity and communications strategy • Establish office procedures within GovOps	• Ensure sustainability of efforts • Continuous improvement on office operational metrics and efficiency	• Plan for external evaluation • Review externally facing tools and resources for user experience and accessibility	• Review technology infrastructure to ensure it continues to meet expectations • Plan for further expansion in future years
Engagement	• Launched "Community Conversations" • Continued holding meetings open to public input	• Seat Advisory Boards • Launch annual student experience audit • Continued community engagement and feedback	• Annual student experience audit • Provide public trainings on using data tools	• Annual student experience audit • Continued user centered design approach	• Annual student experience audit • Continuous improvement based on input and engagement
Analytical Tools	• Defined procurement and implementation plans for technology products. • Issued RFP for data warehouse • Completed Stages 1 and 2 of CDT's "Project Approval Lifecycle" for IT projects • Review of data point definitions identified during planning process	• Build technical infrastructure • Data providers transfer initial data sets • Design an initial dashboard and query builder interface • Complete Stages 3 and 4 of CDT's "Project Approval Lifecycle" for IT projects	• Develop and implement research data request process • Expand analytical data set to include independent colleges • Expand teacher credentialing analytical data set	• Expand analytical data set to include private colleges • Expand analytical data set to include additional early learning and care information	• Expand analytical data set to include additional social service, health, and workforce information.
Operational Tools	• Expand access to californiacolleges.edu planning tools and high school electronic transcript infrastructure	• Expand access to californiacolleges.edu planning tools and high school electronic transcript infrastructure • Assess possibilities for postsecondary electronic transcripts and eTranscript infrastructure	• Expand access to californiacolleges.edu planning tools and high school electronic transcript infrastructure • Assess possibilities for integrating artifacts for competency-based education into eTranscript infrastructure	• Expand access to californiacolleges.edu planning tools and high school electronic transcript infrastructure • Assess possibilities for integrated social service applications	• Complete state-wide scaling of californiacolleges.edu

Note: See Appendix B for an accessible version of this graphic.

Alignment of Governance Activities with the Planning Process and Implementation Issues

Overall, the governance activities have proceeded as outlined in the planning process, with the Governing Board addressing strategic direction, C2C leading implementation, committees developing specific recommendations and policies, strong participation from members of the public, and transparency in decision-making.

The authorizing legislation mandated governance structures that expand upon recommendations from the planning process by creating a larger Governing Board with greater representation from the public and Legislature and establishing more stringent requirements for decision-making.

The larger Governing Board has provided for a breadth of perspectives in discussions. However, delays in the appointment of public members resulted in data system timelines being pushed back by six months. Work could not proceed until the Governing Board was seated because it has the responsibility for hiring the executive director.

In addition, the requirement that all votes be taken by two-thirds of the membership, regardless of the number of Governing Board members present at meetings, meant that several Governing Board members sought to assign alternates to ensure that decisions could be finalized at meetings. The challenge of attaining full participation was compounded when the pandemic-era executive orders that allowed remote-only public meetings lapsed. The recent trailer bill provision temporarily reinstating the remote-only option will support meeting participation in 2022–23, but this issue will resurface once in-person attendance is required again after June 30, 2023.

Section 3: Operations

Office of Cradle-to-Career Data

The authorizing legislation created a new Office of Cradle-to-Career Data within GovOps. Establishing the Office required attending to a host of operational issues, such as securing appropriate equipment and office space; building a preliminary website; developing core policies; and ensuring integration within GovOps processes related to hiring, communications, legislative relations, and security. This work was initially undertaken by GovOps staff with support from WestEd, with tasks transitioning to C2C staff leadership as each position was hired.
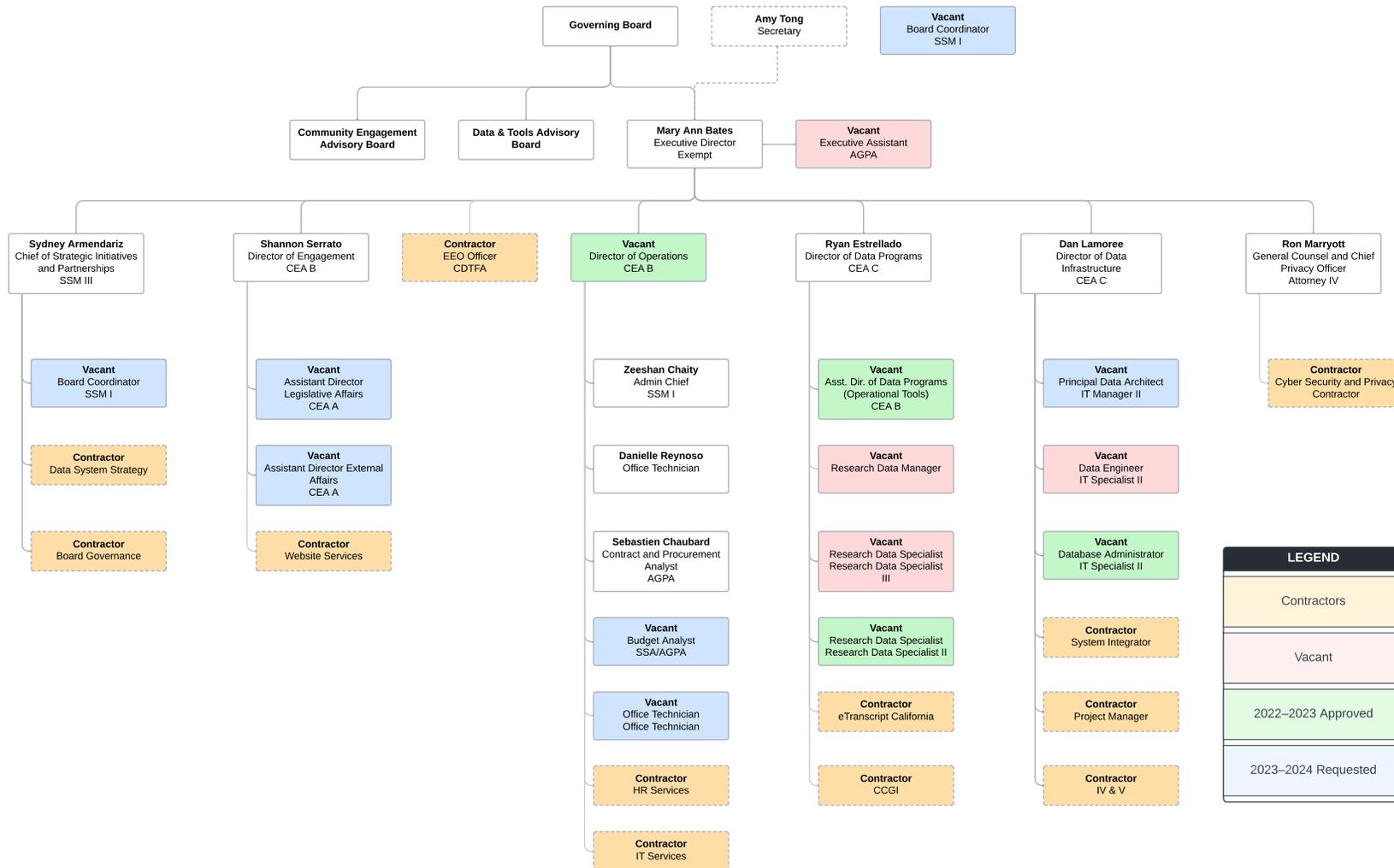
Executive Director

Shortly after the authorizing legislation was signed, GovOps posted the executive director position. More than 30 people applied, and nine highly qualified candidates were interviewed by a committee made up of four Governing Board members. The three top candidates made public presentations at the November 2021 Governing Board meeting, followed by a closed session in which a candidate was selected. The Governing Board met again in closed session in December 2021 to approve the hiring package proposed by GovOps. Mary Ann Bates accepted the offer and began on February 1, 2022.

Staff

During fall 2021, GovOps hired several people to support operations, including a legal counsel, data architect, board liaison, administrative chief, program analyst, and office technician. Immediately after being hired, Mary Ann Bates reviewed the organizational chart, refined the structure to create a stronger executive leadership team, and posted four positions. In July 2022, C2C hired a director of engagement, a director of data infrastructure, a director of data programs, and a program analyst. A director of operations position and an administrative analyst position were posted in August 2022 (see Exhibit 2 on the following page).

Exhibit 2: C2C Staff Chart

Governing Board

Amy Tong
Secretary

Vacant
Board Coordinator
SSM I

Community Engagement Advisory Board

Data & Tools Advisory Board

Mary Ann Bates
Executive Director
Exempt

Vacant
Executive Assistant
AGPA

Sydney Armendariz
Chief of Strategic Initiatives and Partnerships
SSM III

Shannon Serrato
Director of Engagement
CEA B

Contractor
EEO Officer
CDTFA

Vacant
Director of Operations
CEA B

Ryan Estrellado
Director of Data Programs
CEA C

Dan Lamoree
Director of Data Infrastructure
CEA C

Ron Marryott
General Counsel and Chief Privacy Officer
Attorney IV

Vacant
Board Coordinator
SSM I

Vacant
Assistant Director Legislative Affairs
CEA A

Zeeshan Chaity
Admin Chief
SSM I

Vacant
Asst. Dir. of Data Programs (Operational Tools)
CEA B

Vacant
Principal Data Architect
IT Manager II

Contractor
Cyber Security and Privacy Contractor

Contractor
Data System Strategy

Vacant
Assistant Director External Affairs
CEA A

Danielle Reynoso
Office Technician

Vacant
Research Data Manager

Vacant
Data Engineer
IT Specialist II

Contractor
Board Governance

Contractor
Website Services

Sebastien Chaubard
Contract and Procurement Analyst
AGPA

Vacant
Research Data Specialist
Research Data Specialist III

Vacant
Database Administrator
IT Specialist II

Vacant
Budget Analyst
SSA/AGPA

Vacant
Research Data Specialist
Research Data Specialist II

Contractor
System Integrator

Vacant
Office Technician
Office Technician

Contractor
eTranscript California

Contractor
Project Manager

Contractor
HR Services

Contractor
CCGI

Contractor
IV & V

Contractor
IT Services

LEGEND

Contractors
Vacant
2022–2023 Approved
2023–2024 Requested

Note: See Appendix C for an accessible representation of this graphic.

Operational Plans and Budgets

In preparation for the August 2022 Governing Board meeting, C2C staff developed detailed work plans for 2022–23, produced recommendations for how to revise the five-year timeline, and created a draft budget change concept. As noted in Section 2: Governance, these were reviewed and adopted by the Governing Board. C2C has also contracted with a consultant to support strategic planning.

Data Provider Onboarding and Governing Board Support

C2C staff have met regularly with members of the Governing Board to inform the development of operational plans and to coordinate on how to ensure strong participation in the data system.

In addition to having the ad hoc committees described in Section 2: Governance and the data taskforces in Section 6: Technology Infrastructure for the Analytical Data Set, C2C will convene additional committees in the coming months to update technology and security policies and to begin the ingestion of data points necessary to create the analytical data set.

During 2021–22 and the first two months of 2022–23, C2C staff led 18 meetings:

- five meetings of the Governing Board
- one meeting of the Advisory Board Ad Hoc Committee
- three meetings of the Governance Manual Ad Hoc Committee
- three meetings of the Executive Director Review Process Ad Hoc Committee
- three meetings of the Teacher Data Taskforce
- three meetings of the Employment Data Taskforce

Alignment of Operations Activities with the Planning Process and Implementation Issues

The timeline outlined in the planning process did not account for the significant start-up requirements of creating a new government entity or of integrating into mandated state processes. These operational activities took significant bandwidth during year one.

The hiring of the executive director aligned closely with the planning recommendations. For example, the core activities and characteristics listed in the job description were drawn from suggestions made by both data providers and community members. Outreach for the position was coordinated with agency and community interest holders to ensure a strong applicant pool, and the selection process emphasized transparency.

After reviewing the full scope of community engagement activities outlined in the authorizing legislation, C2C leadership determined that the staffing structure outlined in the planning process would not be sufficient. With support from the Governing Board, C2C leadership is requesting several additional positions for 2023–24 to ensure deep engagement with and a focused user-centered design process for a broad array of interest holders, including advocacy groups, community-based organizations, education providers, and state agencies. Additional staff will also help to support the annual student experience audit.

Section 4: Community Engagement

Community Conversations

In June 2022, C2C began holding regular interactive webinars, known as Community Conversations, to engage interest holders. The first session provided an overview of early activities of the data system and an opportunity to engage in direct dialog with both the executive director and the lead facilitator of the planning process. The second session focused on the free tools that streamline planning and applications for college and financial aid, provided through CaliforniaColleges.edu, that are being scaled to serve all California students as part of the data system. More than 180 people have attended the sessions, most of whom had not participated in the planning process or had only recently become aware of the data system.

Interviews and Presentations

The ambitious scope laid out in the planning process has drawn significant attention both within the state and across the country. The executive director and the lead planning process facilitator have presented at forums such as a California-based research collaborative gathering, a national panel convened by The Institute for College Access and Success, and planning meetings for longitudinal data system improvements in Massachusetts and Delaware.

The data system has also been featured in press releases from the Office of Governor Gavin Newsom as a key component of the state's investments in education, which were recently recognized by the nonpartisan Education Commission of the States' Frank Newman Award for State Innovation. The Governor's Office described the data system as providing "transparency to parents, policymakers, and practitioners on how students are served and can be served better."[3]

---

[3] https://www.gov.ca.gov/2022/06/22/california-announced-as-winner-of-the-nations-preeminent-award-for-education-innovation/

The data system has been featured in articles by EdSource,[4] Government Technology,[5] and WestEd,[6] as well as The Cutting Edge podcast.[7] The Data Quality Campaign featured the planning process in its case study "Investing in California's Data Future: How California's P–20W Cradle-to-Career Data System Could Take the State from Last to First" (see Exhibit 3 below), citing the resulting design as "a data system that represents the state's values and meets different stakeholders' needs."[8]

With the hiring of the director of engagement, C2C will begin building partnerships with community interest holders to support activities such as user-centered design for dashboards.

CASE STUDY

JUNE 2022

DQC
Data Quality Campaign

Investing in California's Data Future

How California's P–20W Cradle-to-Career Data System Could Take the State from Last to First

Today, California stands at the precipice of education data excellence. The state recently concluded a multiyear effort to design a P–20W data system that will securely bring together data from across the early childhood, K–12, postsecondary, and workforce sectors to empower policymakers, advocates, and communities with actionable data to support students' success.

---

[4] https://edsource.org/2022/belated-but-ambitious-californias-cradle-to-career-data-hub-taking-shape/668671 and https://edsource.org/updates/high-praise-for-states-cradle-to-career-data-system-in-new-case-study and https://edsource.org/2022/what-information-would-help-you-plan-your-education-path-california-wants-to-know/673112

[5] https://www.govtech.com/education/k-12/how-californias-cradle-to-career-data-system-takes-the-lead

[6] https://www.wested.org/wested-bulletin/new-statewide-longitudinal-data-system-connects-people-and-information-to-improve-outcomes/

[7] https://www.youtube.com/watch?v=gesvt02u_c4

[8] https://dataqualitycampaign.org/resource/californias-p-20w-data-system/

Alignment of Community Engagement Activities with the Planning Process and Implementation Issues

Community activities align with the spirit of the planning process in that they are responsive to requests from interest holders. The hiring of leadership positions, especially the director of engagement and director of data programs positions, prioritized bringing on individuals with deep expertise in communications, engagement with diverse communities, and user-centered design. With both of those positions starting in August 2022, C2C is positioned for deeper community engagement in 2022–23.

Members of the community have continued to participate in public meetings, with a significant number of people listening in to committee meetings on issues ranging from the executive director review process to data definitions on employment and earnings. These public meetings have included opportunities for formal public comment as well as more informal input and questions in Zoom chat.

Section 5: CaliforniaColleges.edu Progress to Support College Planning and Transition

The five-year implementation plan laid out by the Cradle-to-Career Workgroup recommended that year one focus on expanding the reach and technical capacity of CaliforniaColleges.edu, an existing state investment managed by the California College Guidance Initiative (CCGI).

CaliforniaColleges.edu streamlines the college and financial aid application process for students and families. It provides a one-stop platform from which to launch and track applications to the California Community Colleges (CCC), California State University (CSU), and UC as well as FAFSA and California Dream Act applications. This platform provides educators with real-time, actionable data about which students would benefit from support or intervention.

CaliforniaColleges.edu includes tools and lessons that guide students' understanding of financial aid, college, and career options and that enable students and the adults supporting them to track progress toward baseline eligibility for CSU and UC admission. For example, students can access modularized information on how to apply for financial aid, including a month-by-month checklist that explains each task they need to undertake (see Exhibit 4 on page 17).

CCGI also works with school districts to improve the quality and accuracy of their data to ensure that students get credit for the courses they have completed. This validated data is then shared with higher education systems to support decisions about admissions and first year academic course placement.

Scope of Services

The number of districts accessing CCGI's services increased dramatically in 2021–22 from 106 to 145. This means that more than one million individual students now have CaliforniaColleges.edu accounts, representing approximately one-third of students in grades 6–12 in California public schools.[9]

---

[9] For a complete list of districts participating, see https://www.cacollegeguidance.org/our-partners/k-12-partnerships/list-of-k-12-district-partners/

Technology Infrastructure and Services

CCGI made several improvements to its services, including making it easier for educators to manage student accounts and providing students with improved college search tools, a new skills-focused career assessment, and updates to college-eligibility tools to reflect changes in A-G policies.

K–12 Data

CCGI worked with the CDE to identify how the California Longitudinal Pupil Achievement Data System (CALPADS) can provide course-level information to CaliforniaColleges.edu.[10] The CDE will share with CCGI basic information about individuals to ensure that every California public school student in grades six through twelve has a free account they can use to store information on their college and career plans and document whether they have applied to college or for financial aid. This, in turn, will allow educators to provide direct support to students to ensure they complete tasks like applying for federal financial aid or to a California public college. The CDE is currently working with CCGI to complete the legal agreements that will enable the CDE to share student-level data with CCGI. In the meantime, CCGI continues to scale transcript-informed accounts to tens of thousands of additional students using its existing business model of developing data-sharing agreements and uploading data from individual school districts.

Postsecondary and Financial Aid Data

CCGI worked with the UC system and CSAC to improve the frequency with which information is exchanged. Students, families, and educators can now track UC and financial aid submission status within 24 hours—a timeframe that is already in place for CSU and CCC—so that educators can provide just-in-time support to students.

Data Quality

CCGI, the CDE, CSU, and UC met repeatedly during 2021–22 to brainstorm ways to improve the quality of A-G data. They have begun work on several options, including making enhancements to the A-G Course Management Portal, which tracks A-G status, and developing joint messaging to districts about new functionalities to come. Discussions are

---

[10] *Education Code* Section 60900.5

also underway about how to better document which dual enrollment courses fulfil A-G requirements.

Joint Communications

State agencies are partnering with CCGI to develop consistent messaging for high school counselors across the state in order to clarify ways that CaliforniaColleges.edu's free tools can streamline financial aid and college application activities for students (see Exhibit 4 below). For further details on CCGI's work, please see CCGI's separate report to the Legislature.

Exhibit 4: CaliforniaColleges.edu Financial Aid Planning Tool

Alignment of Tools to Support College Planning and Transition Activities with the Planning Process and Implementation Issues

The authorizing legislation provided detailed requirements for the pace at which CaliforniaColleges.edu services should be improved and scaled to streamline the college and financial aid application process in order to help to operationalize the more general recommendations outlined in the planning process. These timelines can be fulfilled only if CCGI, the CDE, CCC, CSU, UC, and CSAC work in tandem; provide clear messaging to the field; and engage students, families, and educators to ensure that the tools address common stumbling blocks for financial aid and college admissions.

As was the case during the planning process, work done during 2021–22 reflected the partners' focus on student needs, collegiality, and attention to detail. However, timelines will be impacted by constraints within state agencies, such as the ability to hire and retain qualified staff to implement the technical updates. Given that state education agencies are working with data infrastructure that is designed for federal reporting and other limited purposes and coordinated with school districts that are using more than 30 different student information systems, tasks that might appear straightforward are often technically difficult to implement.

One factor that helped to speed scaling of CaliforniaColleges.edu is linking adoption of its free tools with other state investments, such as the K–16 Regional Partnerships grants. Participation in the Cradle-to-Career Data System, which includes CaliforniaColleges.edu, is a condition of the grant. While 35 districts were already partnering with CCGI, an additional 63 became new participants. Similar requirements could help to speed adoption of the tools in other districts.

Section 6: Technology Infrastructure for the Analytical Data Set

Project Approval Lifecycle

The authorizing legislation included a requirement that technology procurement must align with the State Administrative Manual, including completing the California Department of Technology (CDT) PAL. PAL is a four-stage process for ensuring interest holders have been consulted, appropriate analyses of use cases and solutions have been completed, sufficient staffing is in place to manage the project, and activities align with plans once underway (see Exhibit 5 below). It can take agencies several years to complete PAL. However, due to the extensive work done during the planning process and close collaboration of C2C, GovOps, and CDT staff, C2C will have been able to complete PAL in a single year.

In December 2021, shortly after GovOps hired a data architect, C2C completed Stage One, which documented the extensive interest holder engagement during the planning process. Stage Two, which details the proposed technical solutions and their justification, was approved in March 2022. While engaging in PAL Stage Two activities, C2C staff also worked closely with CDT to craft an RFP for the data system that took into account CDT's feedback about state requirements, priorities, and best practices.

In July 2022, once the staffing model had been revised, C2C staff completed PAL Stage Three, which clarifies how appropriate expertise will guide implementation and how privacy and security will be addressed. Stage Four will be completed by the end of September 2022, prior to awarding the contract for the system integrator.

PAL Stage One: Business Analysis	PAL Stage Two: Alternative Analysis	PAL Stage Three: Solicitation Analysis	PAL Stage Four: Solution Analysis
Agency Approval	Department of Technology and Department of Finance Approval	Department of Technology Approval	Department of Technology and Department of Finance Approval
• Identify Problem or Opportunity • Establish Business Case/Need • Ensure Strategic Alignment • Assess Organizational Readiness	• Assess Existing Business Processes • Conduct Market Research • Develop Business Requirements • Identify Solution Alternatives • Recommend a Solution • Establish Procurement Strategy • Develop Project Timeline	• Develop Solution Requirements • Develop RFP • Create Procurement Documents	• Conduct RFP Solicitation • Select Vendor • Manage Vendor Contract • Assess Project Readiness • Begin Baseline Project • Procure Department of Finance and Legislature Approval

Procurement

On May 10, 2022, CDT released an RFP for a C2C system integrator. Rather than building the data system from scratch, experts will help construct the analytical data set using a suite of best-of-breed technology tools that have already been vetted and approved by the state; the suite of tools will host data in the cloud, match records, warehouse information, create analytical data sets, visualize information, and ensure data privacy and security. This approach will allow C2C to be nimbler in developing the analytical data set and make it more feasible to connect with other state-level data sets that are leveraging the same technology tools.

C2C fielded more than 150 questions from potential bidders, with responses documented in an addendum that was published before the RFP closed on June 20, 2022. Multiple bids were evaluated by subject matter experts from C2C, CDT, and GovOps. C2C anticipates awarding the contract to the system integrator by the end of September 2022.

Data Definitions

During the planning process, data experts from state agencies and departments helped establish which specific data points should be included in the analytical data set and how to reconcile data points that are computed using different approaches by different agencies. However, work was not completed on two topics: (1) data elements for the Teacher Training and Retention Dashboard and (2) definitions for employment and earnings measures. Therefore, during June and July 2022, C2C convened two taskforces to identify key data considerations.

The Teacher Data Taskforce addressed topics such as which data points are necessary to answer the questions outlined during the planning process, the combinations of data elements that could be used to calculate each data point and which agency could provide those data elements, key issues for consideration when combining and presenting information, and additional work that should be done with each data provider to finalize documentation about data elements and calculations. One of the more significant issues discussed was whether the dashboard could be expanded beyond teachers to include other public K–12 educator roles such as administrators and counselors. The data providers are currently determining whether existing data sets could support this extension. The taskforce also resulted in the California Teacher Credentialing Commission and CSU working together to develop a consistent definition of and consistent data collection mechanisms for teacher residencies, which will greatly improve the ability of policymakers to evaluate the significant increase in funding for teacher residencies that was approved in the 2022–23 state budget.

The Employment Data Taskforce included experts from data providers as well as nationally recognized researchers. Its members weighed in on how best to process the state wage file that will be provided by the Employment Development Department (EDD), based on research conducted by EDD to address concerns about data variations and potential missing values. In addition to clarifying important considerations when calculating metrics such as annual earnings, earnings gains, and living wage attainment, the taskforce suggested ways to test the data. The taskforce also highlighted several issues for future discussion, including identifying which individuals are no longer in the California labor

market, contextualizing earnings by industry of employment, and developing additional measures of economic mobility.

The work of these taskforces will inform C2C's next steps on the analytical data set, which include receiving data from state agencies and refining the scope of related dashboards via a user-centered design process.

Alignment of Technology Infrastructure for the Analytical Data Set Activities with the Planning Process and Implementation Issues

The PAL process provided an opportunity to expand and clarify the technical framework developed during the planning process. Core documentation, such as the process by which information will flow between entities, was reviewed and refined with support from experts at CDT. However, completing the PAL process pushed back the procurement process by nine months, which meant that many of the deliverables related to dashboards and the query builder tool, which the planning process had slated for year one of the data system, had to be pushed out to years two and three.

The RFP was closely aligned with recommendations from the planning process. Core requirements from the Request for Information (RFI) released by CDT during the planning process, as well as feedback from the vendors who responded to the RFI, helped to shape the functional requirements that were listed in the RFP. In addition, the privacy and security requirements in the RFP were drawn from key issues and security frameworks that were discussed during the planning process.

The development of data definitions was also an extension of work begun during the planning process. For example, the Cradle-to-Career Workgroup had recommended convening experts to finalize employment and earnings definitions, and the charter for the Employment Data Taskforce was derived directly from questions identified by the Workgroup. Similarly, the Teacher Data Taskforce continued work that had begun during the planning phase, using the same convening structure for developing documentation.

Section 7: Conclusion

At the conclusion of the planning process for the Cradle-to-Career System, the press and data experts heralded the proposed system as having the potential to provide a national model that leapfrogs other states.[11] One year into implementation, that promise still holds. The Governing Board and the new Office of Cradle-to-Career Data are making their way through the tasks outlined in the authorizing legislation, particularly pertaining to establishing core policies and procedures, hiring staff, maintaining transparency and community engagement, procuring the technology infrastructure for the analytical data set, and scaling tools that can help streamline college and financial aid applications. While the timeline for the first five years has had to be adjusted, such that many public-facing components may not be available until year three, the overall timeline for the first five years remains intact.

The first year also helped to identify actions that the Legislature can take to keep the data system development on track, including allowing for public meetings to be held virtually, approving the budget change request to provide appropriate staffing at C2C, and identifying additional state initiatives that can incentivize the use of CaliforniaCollege.edu's free college and financial planning resources and its single stop for launching college and financial aid applications.

As data system development moves into its second year, the emphasis will shift toward deeper community engagement, such as the student experience audit and user-centered design processes for the first dashboards created using the analytical data set. The continued C2C development will also require increased engagement with the data providers as information is ingested into the technology infrastructure for the analytical data set and additional integrations are implemented by the CDE, CCC, and UC to support college planning and transition tools. With the strong ongoing support from the public, data providers, and policymakers, C2C is well positioned to help move this expanded scope forward.

---

[11] See for example https://dataqualitycampaign.org/california-is-following-best-practices-to-make-its-statewide-data-system-a-reality/ and https://edsource.org/2021/californias-cradle-to-career-data-system-in-line-to-receive-15-million-for-next-phase/646702

Appendix A.
Status of Progress of Legislative Requirements

Table A1: Governing Board

Requirement	Code Section	Status	Description
Appoint an executive officer	*Education Code* Section 10866 (a)	Hired the executive director	See Section 2: Governance
Adopt a timeline	*Education Code* Section 10857 (b)(1)	Approved an updated five-year timeline	See Section 2: Governance
Revise vision, mission, strategic objectives	*Education Code* Section 10857 (b)(2)	Office is exploring contract support for strategic planning	See Section 2: Governance
Adopt data dictionary and standards	*Education Code* Section 10857 (b)(3)	Compiled information for expanded data points	See Section 6: Technology Infrastructure for the Analytical Data Set
Expand data points	*Education Code* Section 10857 (b)(4)	Identified additional data points needed for Educator Training and Retention Dashboard	See Section 6: Technology Infrastructure for the Analytical Data Set
Create new tools	*Education Code* Section 10857 (b)(5)	Will be addressed in 2025–26	
Create and revise data request process	*Education Code* Section 10857 (b)(6)	Will be addressed in 2023–24	

Requirement	Code Section	Status	Description
Create privacy policies	*Education Code* Section 10857 (c)	Started development via Project Approval Lifecycle (PAL) process	Section 6: Technology Infrastructure for the Analytical Data Set
Adopt annual strategic plan, approve budgets, ensure user-centered design approach	*Education Code* Section 10857 (d)(1–3)	Adopted annual plan and budget for 2022–23	See Section 2: Governance
Review and approve plans for professional development, operational tools, topics for summary reports, significant changes to analytical tools	*Education Code* Section 10862 (d) (4)	Will be addressed beginning in 2022–23	
Conduct data quality audits, provide for evaluations, promulgate regulations, other activities	*Education Code* Section 10862 (d) (5–8)	Will be addressed beginning in 2022–23	
Provide reports to the Legislature and Governor's Office	*Education Code* Section 10862 (d) (9)	Legislative reports completed for 2021–22	See this report and companion report from CCGI

Table A2: Office of Cradle-to-Career Data

Requirement	Code Section	Status	Description
Staff Governing Board, advisory boards, and meetings	*Education Code* Section 10867 (b) (1) (A)	Convened meetings of the Governing Board, Ad Hoc Committees, and taskforces	See Section 2: Governance, Section 3: Operations, and Section 6: Technology Infrastructure for the Analytical Data Set

Requirement	Code Section	Status	Description
Support governance manual development	*Education Code* Section 10867 (b) (1) (B)	Created initial drafts and supported the Governing Board to edit drafts	See Section 2: Governance
Onboard new data providers	*Education Code* Section 10867 (b) (1) (C)	Met regularly with data providers to determine how to proceed with start-up activities	See Section 3: Operations
Support development of policies	*Education Code* Section 10867 (b) (1) (D)	Staffed ad hoc committees on the governance manual and executive director review process; developed office policies for GovOps and CalHR review	See Section 2: Governance and Section 3: Operations
Provide recommendations on data points, tools, professional development	*Education Code* Section 10867 (b) (1) (E)	Will be addressed beginning in 2022–23	
Address issues of compliance from data providers	*Education Code* Section 10867 (b) (1) (F)	Coordinated with data providers to address implementation concerns on the Participation Agreement and scaling CaliforniaColleges.edu	See Section 2: Governance and Section 5: CaliforniaColleges.edu Progress to Support College Planning and Transition
Develop annual work plans and budgets	*Education Code* Section 10867 (b) (2) (A)	Completed 2022–23 work plan and budget	See Section 3: Operations

Requirement	Code Section	Status	Description
Oversee personnel and compensation	*Education Code* Section 10867 (b) (2) (B)	Hired eight staff	See Section 3: Operations
Report regularly and procure external evaluations	*Education Code* Section 10867 (b) (2) (C)	External evaluations will be addressed beginning in 2023–24	
Enter into contracts	*Education Code* Section 10867 (b) (2) (D)	Issued RFP for system integrator; secured consultant to support strategic planning	See Section 3: Operations and Section 6: Technology Infrastructure for the Analytical Data Set
Procure and maintain infrastructure for analytical data set	*Education Code* Section 10867 (b) (3) (A)	Selected technology products and began working to establish contracts with vendors to serve as system integrators	See Section 6: Technology Infrastructure for the Analytical Data Set
Create data sets	*Education Code* Section 10867 (b) (3) (B)	Will be addressed in 2022–23	
Ensure availability and privacy of data	*Education Code* Section 10867 (b) (3) (C)	Will be addressed beginning in 2022–23	
Implement analytical tools, including user-centered design	*Education Code* Section 10867 (b) (4) (A-D)	Will be addressed in 2022–23	
Provide neutral summaries	*Education Code* Section 10867 (b) (4) (E)	Will be addressed in 2022–23	

Requirement	Code Section	Status	Description
Monitor effective practices for longitudinal data systems	*Education Code* Section 10867 (b) (4) (F)	Participated in P20W community of innovation, coordinated with WestEd and the Data Quality Campaign, on sharing lessons learned from the C2C planning process	See Section 4: Community Engagement
Scale and operate operational tools, including annual student experience audit, GPAs for financial aid, California College Guidance Initiative (CCGI), eTranscript California	*Education Code* Section 10867 (b) (5)	Expanded access to services provided by CCGI, improved integration with CSAC and UC, implemented improvements to existing CCGI tools Student experience audit will be implemented starting in 2022–23 Scaling eTranscript California will begin in 2022–23	See Section 5: CaliforniaColleges.edu Progress to Support College Planning and Transition
Provide training and technical assistance	*Education Code* Section 10867 (b) (6)	Will be addressed beginning in 2023–24	
Support data requests	*Education Code* Section 10867 (b) (7)	Will be addressed beginning in 2023–24	
Improve data quality	*Education Code* Section 10867 (b) (8)	Will be addressed beginning in 2022–23	
Ensure compliance with all laws	*Education Code* Section 10867 (b) (9)	Implemented compliance through the Participation Agreement	See Section 2: Governance

Requirement	Code Section	Status	Description
Increase government efficiency and identify opportunities for clearer or more consistent messaging to students and families related to education pathways and transitions	*Education Code* Section 10867 (b) (10)	Aligned messaging about the use of CaliforniaColleges.edu to apply for UC, FAFSA, and the Dream Act	See Section 5: CaliforniaColleges.edu Progress to Support College Planning and Transition
Create user-facing tools to explore policy problems and solutions	*Education Code* Section 10860 (c) (7) (C)	Will be addressed in 2025–26	

Table A3: Data Providers

Requirement	Code Section	Status	Description
Contribute P20W data points	*Education Code* Section 10871 (a)	Will be addressed beginning in 2022–23	
Ensure data quality	*Education Code* Section 10871 (b)	Participated in taskforces to develop data definitions for the Teacher Training and Retention Dashboard, employment, and earnings	See Section 6: Technology Infrastructure for the Analytical Data Set

NOTE: A separate report from CCGI addresses statutory requirements in *Education Code* Section 10870 for college planning and transition tools.

Appendix B.
Accessible Presentation of Exhibit 1: C2C Revised Five-Year Plan

	Year 1	Year 2: FY 2022–23	Year 3: FY 2023–24	Year 4: FY 2024–25	Year 5: FY 2025–26
Strategy and Operations	• Seated Governing Board • Signed legal agreements • Appointed Executive Director • Defined leadership positions & initial staff recruitment	• Recruit leadership and build staff team • Secure and prepare physical space for office and community engagement • Define brand identity and communications strategy • Establish office procedures within GovOps	• Ensure sustainability of efforts • Continuous improvement on office operational metrics and efficiency	• Plan for external evaluation • Review externally facing tools and resources for user experience and accessibility	• Review technology infrastructure to ensure it continues to meet expectations • Plan for further expansion in future years
Engagement	• Launched "Community Conversations" • Continued holding meetings open to public input	• Seat Advisory Boards • Launch annual student experience audit • Continued community engagement and feedback	• Annual student experience audit • Provide public trainings on using data tools	• Annual student experience audit • Continued user centered design approach	• Annual student experience audit • Continuous improvement based on input and engagement
Analytical Tools	• Defined procurement and implementation plans for technology products. • Issued RFP for data warehouse • Completed Stages 1 and 2 of CDT's "Project Approval Lifecycle" for IT projects • Review of data point definitions identified during planning process	• Build technical infrastructure • Data providers transfer initial data sets • Design an initial dashboard and query builder interface • Complete Stages 3 and 4 of CDT's "Project Approval Lifecycle" for IT projects	• Develop and implement research data request process • Expand analytical data set to include independent colleges • Expand teacher credentialing analytical data set	• Expand analytical data set to include private colleges • Expand analytical data set to include additional early learning and care information	• Expand analytical data set to include additional social service, health, and workforce information.
Operational Tools	• Expand access to californiacolleges.edu planning tools and high school electronic transcript infrastructure	• Expand access to californiacolleges.edu planning tools and high school electronic transcript infrastructure • Assess possibilities for postsecondary electronic transcripts and eTranscript infrastructure	• Expand access to californiacolleges.edu planning tools and high school electronic transcript infrastructure • Assess possibilities for integrating artifacts for competency-based education into eTranscript infrastructure	• Expand access to californiacolleges.edu planning tools and high school electronic transcript infrastructure • Assess possibilities for integrated social service applications	• Complete state-wide scaling of californiacolleges.edu

Appendix C.
Accessible Presentation of Exhibit 2: C2C Staff Chart

- Governing Board
  - **Amy Tong**, Secretary
  - **Vacant**, Board Coordinator, SMM I (2023–2024 Requested)
  - Community Engagement Advisory Board
  - Data & Tools Advisory Board
  - **Mary Ann Bates**, Executive Director (Exempt)
    - **Vacant**: Executive Assistant, AGPA
    - **Sydney Armendariz**, Chief of Strategic Initiatives and Partnerships, SSM III
      - **Vacant**, Board Coordinator, SSMI (2023–2024 Requested)
      - **Contractor**, Data System Strategy
      - **Contractor**, Board Governance
    - **Shannon Serrato**, Director of Engagement, CEA B
      - **Vacant**, Assistant Director Legislative Affairs, CEA A (2023–2024 Requested)
      - **Vacant**, Assistant Director External Affairs, CEA A (2023–2024 Requested)
      - **Contractor**, Website Services
    - **Contractor**, EEO Officer, CDTFA
    - **Vacant**, Director of Operations, CEA B (2022–2023 Approved)
      - **Zeeshan Chaity**, Admin Chief, SSMI
      - **Danielle Reynoso**, Office Technician
      - **Sebastien Chaubard**, Contract and Procurement Analyst, AGPA
      - **Vacant**, Budget Analyst, SSA/AGPA (2023–2024 Requested)
      - **Vacant**, Office Technician, Office Technician (2023–2024 Requested)
      - **Contractor**, HR Services
      - **Contractor**, IT Services
    - **Ryan Estrellado**, Director of Data Programs, CEA C
      - **Vacant**, Asst. Dir. of Data Programs (Operational Tools), CEA B (2022–2023 Approved)
      - **Vacant**, Research Data Manager
      - **Vacant**, Research Data Specialist, Research Data Specialist III

- **Vacant**, Research Data Specialist, Research Data Specialist II (2022–2023 Approved)
- **Contractor**, eTranscript California
- Contractor, CCGI
- **Dan Lamoree**, Director of Data Infrastructure, CEA C
  - **Vacant**, Principal Data Architect, IT Manager II (2023–2024 Requested)
  - **Vacant**, Data Engineer, IT Specialist II (2022–2023 Approved)
  - **Vacant**, Database Administrator, IT Specialist II
  - **Contractor**, System Integrator
  - **Contractor**, Project Manager
  - Contractor, IV & V
- **Ron Marryott**, General Counsel and Chief Privacy Officer, Attorney IV
  - Contractor, Cyber Security and Privacy Contractor