Per California Code of Regulations, title 2, section 548.5, the following information will be posted to CalHR's Career Executive Assignment Action Proposals website for 30 calendar days when departments propose new CEA concepts or major revisions to existing CEA concepts. Presence of the department-submitted CEA Action Proposal information on CalHR's website does not indicate CalHR support for the proposal.

### A. GENERAL INFORMATION

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3. Organizational Placement (Division/Branch/Office Name)

Cradle- to-Career Data System

4. CEA Position Title

Director of Data Infrastructure

5. Summary of proposed position description and how it relates to the program's mission or purpose. (2-3 sentences)

The Director of Data Infrastructure will be responsible for building the analytical data system that will power our public facing dashboards, query tools, and research requests for Cradle-to-Career. They will manage the data infrastructure staff and contractors and work closely with the data and research services team and data providers to ensure the data system meets user needs.

6. Reports to: (Class Title/Level)

Executive Director

7. Relationship with Department Director (Select one)

- ✔ Member of department's Executive Management Team, and has frequent contact with director on a wide range of department-wide issues.

- ☐ Not a member of department's Executive Management Team but has frequent contact with the Executive Management Team on policy issues.

(Explain):

8. Organizational Level (Select one)

- ☐ 1st
- ☐ 2nd
- ☐ 3rd
- ☐ 4th
- ☑ 2nd (mega departments only - 17,001+ allocated positions)
9. What are the duties and responsibilities of the CEA position? Be specific and provide examples.

Under the administrative direction of the Cradle-to-Career Data System (C2C) Executive Director the Director of Data Infrastructure is responsible for building the analytical data system that will power our public facing dashboards, query tools, and research requests for C2C. They will manage the data infrastructure staff and contractors and work closely with the data and research services team and data providers to ensure the data system meets user needs.

40% (E) Manage a team of Information Technology Specialists and contractors for implementation of data processing and data warehousing to produce analytical datasets: Architect data infrastructure and develop and implement technical and data system requirements consistent with a modern, cloud-based stack; Develop technical implementation plans for data partitioning, data normalization/denormalization, data aggregations and ETL/ELT; Review and provide input on data quality requirements and verification tests for data model validation in partnership with data and research services team; Design and oversee data processing workflows to cleanse, standardize, duplicate, and match data from partner entity data sets; Develop cost estimates for right-sizing cloud-based technical components (data warehouse, data processing system, data storage, and other supporting tools) taking into account scaling needs over time and balancing cost with performance; Monitor technical implementation and ensure systems are developing per plan and with excellence; Scope and manage release cycles

Overseeing research and development for all policies and principles for the statewide analytical data systems to ensure security, extensibility, scaling, efficiency, and data quality, for the creation of analytical data sets that will be used statewide and ingest data from more than a dozen state entities, including higher education segments, as well as external entities.

30% (E) Manage data infrastructure team and contractors for the iterative development of conceptual and logical data model and system requirements to support the C2C vision: Work closely with project team to validate and refine end user input and feedback on their needs for analytical data products, Assist in drafting and reviewing data models with the project team and collecting and incorporating feedback from stakeholders, Review proposed data models with future needs in mind, evaluating for flexibility, Provide working proofs of concept as needed to help in the evaluation of data models

20% (E) Develop, refine, and manage data infrastructure processes, governance, and documentation, including, but not limited to: data security and ethics, including protection of personally identifiable information (PII); data processing rules and management; code maintenance in a versioned code repository; quality management and continuous integration; and manage and perform as needed: installations and monitoring of databases and tools, documentation of data products (data dictionaries, data model and pipeline diagrams, etc.), and data cleaning and validation protocols.

10% (E) Management and administration. Hire, build, and manage a high performing data infrastructure team. Develop and manage technology and service agreements and contracts in support of the system and ensure that they are meeting expectations and participate in the selection of qualified vendors for implementation.
B. SUMMARY OF REQUEST (continued)

10. How critical is the program's mission or purpose to the department's mission as a whole? Include a description of the degree to which the program is critical to the department's mission.

☑ Program is directly related to department's primary mission and is critical to achieving the department's goals.

☐ Program is indirectly related to department's primary mission.

☐ Program plays a supporting role in achieving department's mission (i.e., budget, personnel, other admin functions).

Description: The C2C will be a suite of user-friendly resources focused on early learning through K-12 and higher education, as well as on the financial aid and social services that help students reach their goals. By legislation it is required to include:

• Planning and application tools for students, families, and educators to streamline the college and financial aid processes and monitor student progress.

• Dashboards, query tools, and an analytical data set for researchers, policymakers, educators, and community members to inform research, advocacy, and policy analysis.

• Community engagement and training to raise awareness of the data system and ensure it can be used by students, families, educators, researchers, and policymakers.

The Director of Infrastructure will be managing the analytical data warehouse that feeds the dashboards, query tools, and research requests and is a foundational part of the overall system. The C2C will provide expansive public access to one of the most comprehensive data systems in the nation, linking existing education, workforce, financial aid, and social service information to address disparities in opportunities and improve outcomes for all communities throughout California. The C2C Data will be a suite of user-friendly resources focused on early learning through K-12 and higher education, as well as on the financial aid and social services that help students reach their goals.
B. SUMMARY OF REQUEST (continued)

11. Describe what has changed that makes this request necessary. Explain how the change justifies the current request. Be specific and provide examples.

In 2019 the California Legislature called for the establishment of a statewide, longitudinal data system for California. The C2C aims to link existing education, workforce, financial aid, and social service information to better equip policymakers, educators, and the public to address disparities in opportunities and improve outcomes for all students throughout the state.

Governor Newsom and legislature approved funding for the C2C in its 2021-22 budget. The data system will be implemented by the Government Operations Agency (EDC § 10862). The Cradle-to-Career Data System will provide data-informed tools to help students reach their college and career goals and deliver information on education and workforce outcomes. This user-friendly system will include resources focused on early learning through K-12 and higher education, as well as on the financial aid and social services that help students reach their goals. The data system’s tools will be designed to help a wide range of users find the most relevant information and use it to create better outcomes for students.

California’s C2C will be unique in the nation because it will deploy a three-pronged approach: operational tools that outline education and career options while clarifying individual progress toward those goals, analytical tools that track trends and provide comparisons between groups, and a significant focus on community engagement. This approach recognizes that students and teachers need different types of information than researchers and policy analysts, and that community members can be partners if given outreach and training in interpreting and utilizing the information that the data system produces. Finally, with the system expanded beyond educational data to include social service, financial aid, workforce training, and employment information, users will be better equipped to understand equity gaps in context. The broader data set means that solutions are more likely to focus on structural factors that can be addressed through policies and investments, rather than focusing narrowly on student characteristics.

The Governor’s 2021–22 Budget Proposal and the accompanying statutory changes contained in the proposed budget trailer bill created the new office. This position is being created to implement the statute.
C. ROLE IN POLICY INFLUENCE

12. Provide 3-5 specific examples of policy areas over which the CEA position will be the principle policy maker. Each example should cite a policy that would have an identifiable impact. Include a description of the statewide impact of the assigned program.

This position will be responsible for all policies and principles for the statewide analytical data system to ensure security, extensibility, scaling, efficiency, and data quality, for the creation of analytical data sets that will be used statewide and ingest data from more than a dozen state entities, including higher education segments, as well as external entities.

These policies include at a minimum:
1) data processing policies, standards, and rules to establish data quality consistent with data system policies to ensure that the system yields consistent and accurate estimates of integrated data metrics
2) data model policy and standards designed for flexibility and to accommodate future datasets in an extensible manner to ensure that the data system can expand over time to answer additional key policy questions
3) security policies and standards consistent with statewide requirements as well as federal regulations to ensure the highest level of security and protection of personally identifiable information
4) availability, documentation, and code maintenance policies to ensure auditability and traceability of data processing steps to maintain system continuity

Successful implementation and coordination of C2C’s initiatives have far reaching in impact, highly visible, and sometimes involving sensitive issues regarding personally identifiable information, data trends for various groups, and the use and implementation of data for broader policy making. These issues have statewide impact on various stakeholder groups. Such responsibilities may elicit scrutiny from the Legislature, federal government, other state agencies, the media, and the public.
C. ROLE IN POLICY INFLUENCE (continued)

13. What is the CEA position's scope and nature of decision-making authority?

As the senior technical lead for the system, this role will set system policy for the data system and make architectural and technology decisions that will affect the statewide longitudinal data system that intakes data from more than a dozen data providers. All data estimates and dashboards that come out of this system will be used to inform statewide policy on all areas of state funding and programming throughout the lifetime of Californians. This position will also be responsible for making decisions related to the team hiring and management as well as overseeing the selection and management of contractors to help implement the system and will manage the system release cycle.

The CEA exercises judgment in all decisions affecting directly subordinate divisions, and department wide. The CEA has decision-making authority for the coordination and implementation of initiatives and projects and expenditures. The CEA has the responsibility to help ensure that new or existing initiatives, projects, policies and processes are implemented in accordance with the Department's mission, policies, and procedures, as well as federal and state laws.

14. Will the CEA position be developing and implementing new policy, or interpreting and implementing existing policy? How?

The CEA will both develop and implement new policy, as well as interpret and implement existing policy. The incumbent must possess an understanding of existing policies and business procedures that impact the Department and all the regulations that relate to that. They must also be aware of new laws that have been passed and that are being proposed by the California Legislature. As changes occur, the CEA will be responsible for developing and implementing new policy to ensure the Department follows new legislation. They will work with the Department's Executive Management Team, their peers, staff in other units, and their team members (staff and subordinate supervisors) to establish the best policies for the Department. The incumbent must also be forward-looking and be aware of what's on the horizon to ensure policies and procedures can be easily updated to accommodate evolving business and department needs. Internally, the CEA will be responsible for evaluating the needs of stakeholders and employees and developing or updating existing policy to ensure operational programs provide timely and accurate information to stakeholders.

The CEA position will implement new policy related to the analytical data system and as part of the creation of the new entity. This includes all the security and data policies and standards that came out of the 18-month planning process for the system. These policies will be implemented via the technical infrastructure of the data warehouse and data processing tools.