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| J:\Function\Branding\- New OMES logo\Horizontal\OMES-logo-horiz-RGB.jpg |  | Amendment of Solicitation |

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| **Date of Issuance:** |  05/18/2023 | **Solicitation No.** |  EV00000210 |
| **Requisition No.** |  2650012488 | **Amendment No.** |  1 |
| Hour and date specified for receipt of offers is changed: | [x]  No  | [ ]  Yes, to: |       |          CST |
| Pursuant to OAC 260:115-7-30(d), this document shall serve as official notice of amendment to the solicitation identified above. Such notice is being provided to all suppliers to which the original solicitation was sent. Suppliers submitting bids or quotations shall acknowledge receipt of this solicitation amendment prior to the hour and date specified in the solicitation as follows:(1) Sign and return a copy of this amendment with the solicitation response being submitted; or,(2) If the supplier has already submitted a response, this acknowledgement must be signed and returned prior to the solicitation deadline. All amendment acknowledgements submitted separately shall have the solicitation number and bid opening date printed clearly in the subject line of the email. |
| **RETURN TO:** [**Supplier Portal (oklahoma.gov)**](https://oklahoma.gov/omes/services/purchasing/supplier-portal.html) |
|  | Darlene Saltzman |  |
|  | Contracting Officer |  |
|  | (405) 694-7016 |  |
|  | Phone Number |  |
|  | Darlene.Saltzman@omes.ok.gov |  |
|  | E-Mail Address |  |
| **Description of Amendment:** |
| a. This is to incorporate the following: |
| On behalf of the State of Oklahoma, the Office of Management and Enterprise Services (OMES) gives notice of the following questions concerning this solicitation, received during the Q&A period, which closed on **05/05/23**. All questions and procurement/agency responses are detailed below:**Solicitation EV00000210 Questions Set 1**Q 1. Can you please clarify where exactly in the portal we are to upload the bid packet itself? I can find where to upload various attachments/forms/certifications in response to the individual questions; should the overall bid packet be uploaded as an attachment to the "Event"? • Everything should be attached to the line under comments. There should be a comments/attachments button on the line. Please submit your bid packet there.Q 2. In relation to, "Solution Ownership and Maintainability - including adherence to OSDE requirements for the transfer of the system to state operations at the end of the contract," will OSDE consider COTS solutions with annual licensing that includes maintenance and support by the proposing vendor? • The OSDE will consider proposals that include a COTS solution. However, the product would need to be customizable to meet the OSDE’s current and future requirements.Q 3. Question regarding 8.2: Required Bid Packet Format. The section describes 14 sections that proposals need to be divided into. Should each section be submitted as its own separate file(s), to maintain the original file format of the content (e.g., Exhibit 2 Technical Requirements)?• Provide the proposals on one document clearing identifying each section with its own header. Q 4. CR 1.1: CPSI does not host applications. Are you asking for the Supplier to provide the hosting site for development/testing? Or can the SDE/OMES provide the cloud hosting on their cloud for these environments?• The OSDE is asking the supplier to provide the hosting site during the development phase, if OMES/OSDE supply the development environment, that should be reflected in the proposal and the pricing sheet should also reflect the estimate cost of the system and within the pricing sheet as part of the response. CR 1.3: Can you please detail what the incident alert, tracking, investigation, and analysis means? Is this email notification, dashboard, help desk, or what exactly?• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications. Q 5. CR 2.1: For the SIF Vendor System, do you mean the current CPSI system in place? Are you asking for a new ODS and data collection system?• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications.CR 2.4: Can you please provide definitions for the acronyms GCP and DASH? We are assuming GCP stands for Google Cloud Platform. We found a reference to DASH on the OMES site. Are you asking for the supplier's solution to integrate with DASH and GCP? Or is there something else that needs to be done?• GCP – Google Cloud Platform• DASH – Oklahoma State Data Sharing Platform • A requirement of this RFP is the solution must fully integrate with GCP and DASH.• Please refer to the Enterprise Reference Architecture for alignment in a proposed solution. Q 6. CR 3.1.d: CPSI currently provides our xDUID for STN matching, maintenance, creation, etc. Is the State asking the Supplier to bid on a new STN system? Or are you just asking that the Supplier support the current system?• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications.General Data Question: How many external applications are you indicating that should be integrated into the system? And what are those external applications? Should the Supplier quote the work to integrate the other systems or to just be able to support them via APIs?• Currently there are over 80 applications. The bidder should be able to integrate applications into the solution and support APIs. Q 7. CR 4.2: Are you asking the supplier to build the data warehouse? Other areas of the RFP indicate that there is a data warehouse already in place. What are the specifications for the new data warehouse, if asking for one? What data format standard - CEDS, SIF, Custom?• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications. • OSDE is expecting the bidder to propose the best solution and be able to support CEDS, SIF, and Custom formats. CR 4.3: What format would you like the Data Dictionary to be in - online, document, web page, or some other format?• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications.CR 4.4: CPSI is currently implementing the new Data Certification process and UI at the SDE. Are you asking the Supplier to bid a new Data Certification process or just to integrate with the new one currently being implemented?• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications.CR 4.5: The RFP is referencing reporting modules. Are you asking the Supplier to write the new reports or to support the current reporting modules in place at the SDE? If we are to write the reporting modules, what are the specifications?• OSDE expects the bidder to propose the best solution to support current reports and/or new ones. Specification will be supplied to the successful bidder.CR 4.5.b: Are you asking the supplier to build a new Public Dashboard or to integrate and support the current Public Dashboard?• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specificationsCR 4.5.c: This section references MOUs and ORRs. Is this just informational? If not, what is the supplier supposed to provide for this section in the way of a solution?• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications. Q 8. CPSI currently provides a system and licenses the software to the SDE/OMES. When bidding, I will be bidding using the same software components. Do I need to bid pricing for the components? The SDE is currently licensed through the end of the calendar year. Should I provide new pricing for the upcoming calendar year (2024)?• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications.Q 9. 2.15 Are you asking the Supplier to bid a new STN system? CPSI currently provides this system to the State. Or are you asking the Supplier to integrate and/or support the current STN System?• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications. 3.1: Do you have a data warehouse at the state that should be interfaced with? Should the supplier build the data warehouse? Can this statement be detailed please.• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications.3.4: Are these canned reports that have specifications? Or should the Supplier provide the tool to build the reports? Can this statement be detailed please?• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications.3.8: Where should the queries be saved? What is meant by this exactly?• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications.3.11: What are the requirements and specifications for the dynamic dashboards?• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications.3.13: Should the data catalogue be in any particular format? Online, document, web page, etc.• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications.General: Are you asking for the supplier to support the creation of these reports and dashboards or are you asking the Supplier to provide and build specific reports and dashboards? If it is the second option, do you have any requirements and specifications for these reports and dashboards?• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications.**Solicitation EV00000210 Questions Set 2**Q 1. 4.3: This statement indicates that the state currently has a long-term data warehouse. Can you please provide clarification on this?• OSDE currently has components to build out a data warehouse for State’s long-term data. 5.5: Is the state asking for a completely new help desk solution or for a "help desk" within the applications themselves? Please clarify the requirements for this section. • The Solution should include a system for incident logging, tracking, and management including a user ticketing system for OSDE and OMES users, as well as users in schools and districts.Q 2. 6.2: Which version of WCAG are you requesting? There are several versions.• OSDE expects that all solutions currently include compliance with WCAG 2.1 and expect that by the end of the work period that the solution will comply with WCAG 2.2 when officially released.6.2: Do you have a specific VPAT in mind? Is this a VPAT for each application or only for user-facing applications and web pages?• OSDE expects that a VPAT only for user-facing applications and webpages6.2: We currently have a number of toolsets that are just meant for system administrators. Do you need these to have a VPAT provided? Or just for new applications and web pages?• Applications that are not public/customer facing are not required to have VPAT’s complete.6.2: We currently have most of the applications being proposed already installed at OMES/SDE. Do I need to provide any documentation for what is already there and approved for use?• OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications. OSDE expects all bidders to provide the full solution, even if the bidder already does business with the state.Q 3. 7.1: CPSI does not provide hosting services. Can we use the state's current cloud for development and testing or do we need to quote cloud hosting for the development and testing?• The supplier can use the state’s current cloud resources for development and testing but financing those resources will need to be addressed in the proposal, and it is OSDE expectation that there is a clear definition of who will be responsible for those costs. 8.5: Are these response times expected 24/7 or during business hours?• In Exhibit 2 - Technical Requirements, Section 8.4 outlines response time expectation.• Exhibit 1 – x Availability: System should be up 99.9% of the time between 3am and 9pm Central Time.Q 4. Section 8.1 D: There are several items reference here to be inserted and provided in the bid. Should all of these items be placed as part of Section 8 of the Bid Packet as part of 8.2H? • Section 8.D. Section Four: Requested Exceptions to Terms I. Any requested exception or revision to terms or conditions provided by the State shall be inserted in this section in Word format using the table provided at the end of these Bidder Instructions.Bid Packet Format: Should each section be a separate document that is submitted on the portal? Or should each section be combined into one document? Or is it the bidder's choice?• OSDE expects one document from each vendor with headers clearly defining each section.Q 5. Should all of the attachments we are providing as part of this bid be submitted to:Event Comments and Attachments Section Add New Attachments areaIf not this location, where?• Attach documents to the Line Comments and Attachments section. Q 6. Is there a document or link you can provide, to the schedule and scope of state collections?• <https://sde.ok.gov/reporting-requirements-calendar>Q 7. Can you provide the list of validations that are performed on the data?• OSDE will provide this list to the winning bidder as it is a privacy and security issue.Q 8. For the security assessment, how would you like us to respond to the maturity rating prompts? There's a 0-5 drop down for each maturity level, but it seems like each numbered rating corresponds to a specific maturity level.• If you are not looking to improve that line item and it is as mature as possible, then it should be a “5”. The maturity rating tells us if you are looking to improve it or just tells us if you want to improve it.to improve it, or just tells us if you want to improve it or not.Q 9. Can you provide additional explanation of the risk matrix, in the last tab of the security assessment?• The Risk Matrix tab is for our security team to use to show the residual risk rating based off of answers provided.Q 10. In the security assessment, how should we respond to criteria that don't apply (e.g., PCI-DSS)? The status option drop-down provides a Y/N but not an N/A. Should we leave it blank?• Answer it as “No” and put in the justification box to the right that it does not pertain to your organization.**Solicitation EV00000210 Questions Set 3**1. For the security assessment, how would you like us to respond to the maturity rating for items that are strictly Y/N items? Should those get a 5 for Y and a 0 for N?
* There is drop down for each cell so a score can be entered for each row and column.
* If you are not looking to improve that line item and it is as mature as it could be, then it should be a “5”. The maturity rating just tells us if you are looking to improve it or not.

1. Is there an evaluation rubric / scoring sheet for this RFP, that you can provide to bidders?
	1. The rubric sheet is aligned to the requirements in the RFP specifications.
	2. OSDE will use the scoring rubric for internal purposes only.

**Questions from Exhibit\_1-\_Specifications**1. Can you share success metrics or KPIs with us around section iv ?
	1. The requirements around the measures of success include the current goals and will be finalized with the winning bidder.

**Questions from Exhibit\_2\_Technical\_Requirements**1. DATA COLLECTION: 1.3-Can details be shared around data volume (peak or average data volume) and data formats expected for bulk uploads?
	1. OSDE requests @ 700,000 records each weekend for all required SIF objects. Smaller requests, for specific objects occur multiple times per week. The goal is to keep all data elements updated frequently for real time reporting.
2. DATA COLLECTION: 1.4-Does State need assistance with optimizing business processes ?
	1. The State is always looking for ways to optimize business processes and efficiencies.
3. DATA COLLECTION: 1.6-Can details be shared around data exchange patterns, types of integrations between districts and SIS vendors ?
	1. Currently there are numerous ways districts, SIS vendors, and OSDE integrate for data exchange, including manual uploads, SIF, manual extracts, SFTP, and APIs. We expect the bidder to provide a solution to meet the requirements outlined and develop towards a standardized solution as outlined in the RFP and in accordance with the Enterprise Reference Architecture.
4. DATA PROCESSING: 2.11-Is there a current SSO already in place or SSO solution will have to be built ?
	1. OSDE has a database-driven SSO for users. An SSO will need to be built to accommodate new stakeholders and users, through a CIAM-type technology aligned to the Enterprise Reference Architecture.
5. DATA PROCESSING: 2.14-Do the validation rules need to be specified for each of the environments (Dev, Test, Prod etc.) or are they going to be centrally managed ?
	1. OSDE expects validations should be handled in an appropriate manner that aligns with the RFP requirements and the Enterprise Reference Architecture.
6. REPORTING: 3.3 -Are SLAs defined for providing the fresh, reliable data?
	1. The SLAs for fresh, reliable data have not been defined formally, but the norm is within an hour of an update or request from SIS vendors.
7. REPORTING: 3.5 -Please confirm this is a requirement for the overall solution and not just for the Reporting section.
	1. Confirmed.
8. REPORTING: 3.10 -Is there requirement for both public and private data exploration capability?
	1. There are requirements for both public and private data exploration capability, which differ in security and data privacy specifications.
9. REPORTING: 3.16 -Please confirm that the export is only for the reporting data (and not the raw data).
	1. This requirement is only for the reporting data.
10. LONGITUDINAL DATA MANAGEMENT: 4.2-Have data retention requirements been finalized for maintaining multiple years of data ?
	1. OSDE’s data governance board is currently working on the data retention policy and maturing the processes included. Currently, the data retention policy for most collections is 10 years. There are a few records which must be retained in perpetuity.
11. LONGITUDINAL DATA MANAGEMENT: 4.3-What is the data transmission frequency and volume?
	1. Data transmission is currently daily but the OSDE would like to see that timeline as close to real-time as possible. The OSDE will work with the winner bidder to do an initial level set and then set goals as development is completed. As per volume, Exhibit 2 Technical Requirements 8.2 mentions, “Currently, the OSDE stores approximately three terabytes of data annually.” daily, but the OSDE would like to see that timeline as close to real-time as possible.
12. HOSTING: 7.1/7.2-Taking assumption that cloud environment will be provided by state to do development and the solution will not be developed on local machines?
	1. Correct. The bidder should develop the solution within a cloud environment.

**Solicitation EV00000210 Questions Set 4****Business Intelligence/Business Analytics Software Questions**1. **Exhibit 1**

**Purpose-Page 1:*** What is ODSE’s current enterprise reporting strategy?
	+ OSDE is interested in a proposed solution for the most efficient, effective, and high-quality reporting strategy regardless of current practices.
* Does ODSE currently offer end users self-service capabilities with the existing enterprise reporting platform?
	+ No, that functionality is not currently offered in the OSDE environment, and it is defined in some of the specifications desired within the RFP.
1. **Business Drivers- Page 1**

**Reporting Efficiency*** What is the current SLA for reporting delivery timelines?
	+ There are several SLA timelines for differing reports. OSDE will work with the winning vendor to setup reasonable SLAs for this deliverable.
* What is the proposed new SLA for delivering timely reports?
	+ There are several SLA timelines for differing reports. OSDE will work with the winning vendor to setup reasonable SLAs for this deliverable.

**Measures of success- Goals**1. **Self-service reporting-Page 2**

*Enable stakeholders with self-service data…** + What is the approximate number of end users that will require access to self-service reporting?
		- OSDE is looking for a system that can handle many types of stakeholders. The “it takes a village” method. With a fully developed system, the expectation is that users could be anywhere and all US citizens could potentially need access to self-service data.
		- Internal reporting (meaning school districts, state users, etc.) the number is lower than for an external facing self-service data portal.
		- Reviewing the User Ecosystem in Exhibit – 1 – Specifications provides additional insight.
	+ Can you please quantify the number of internal and external users?
		- Internal ~100,000
		- External ~ 100,000
1. **Enhanced reporting capabilities- Page 6**

*Analytical Tooling from different vendors…** + Can you please help define what is meant by Analytical tooling?
		- Analytical tooling includes applications that retrieve data from one or more business systems and combine into a repository of sorts for review and analysis.
		- Example: Dashboard/visualization integration with other third-party BI tools (i.e., Power BI, Tableau, etc.?
1. **ii. Third Party Vendor Security Assessment, page 5**
* Is it acceptable to OSDE if we submit SIG Lite document, and SHI data security package in lieu of responding to the Security questions excel file named,"State\_of\_Oklahoma\_Third-Party\_Vendor\_Security\_\_Assessment"?
* The State of Oklahoma Third Party Vendor Security Assessment must be completed and submitted with your response.
1. **L. Section Twelve: Business References, page, page 10**

Can we use any reference from government or education customer on data management which may not be specifically on education data management? Please clarify. We did not clarify what type of reference to provide. Please provide the best reference you have with or without a correlation the services you are responding to. 1. The RFP states "Regardless of product modality, once the System is operational at the end of the initial contract period, it will be managed and operated by OMES and OSDE, and the State will own all components." Since Oklahoma favors a SaaS approach (as stated in the Enterprise Reference Architecture), it makes it difficult to propose a COTS SaaS solution that may have a transfer of ownership after only one year. Is Oklahoma open to an approach where a perpetual license is granted (in lieu of full ownership), and that license is only granted if optional years are included in the contract period?
	* The OSDE will consider SaaS COTS providers. In this case, licensing terms and all financials need to be fully explained in detail within the pricing section of the proposal.
	* Any exceptions to terms need to be submitted on the Exceptions to Terms document located at the end of the Bidder Instructions.
2. What is the anticipated budget for this project?
	* + The modernization budget is not published. Provide your best pricing for your solution within Exhibit\_3\_Pricing.
3. Is there an incumbent for this work, or any specific components of it?
	* + There are some incumbents who are doing some aspects of this work. OSDE desires a modernization of the data systems and have spent two years defining business requirements, cases, and a proposed architecture to meet current needs.
4. Would the State be open to using Ed-Fi as the central standard to manage integration of various data systems?
	* + The state is unable to use the Ed-Fi standard for collections made directly from the Student Information Systems due to statutory requirements within the State of Oklahoma requiring the use of SIF. However, Ed-Fi could be used within the solution for other purposes.
5. The reporting requirements listed indicate a focus on state-level users and use cases, but other requirements indicate some level of interaction by district or even school-level stakeholders. What types of reports, with what data types, are desired for which level of user (OSDE, other state departments, public, districts, states)
	* + The proposed solution is expected to deliver reports for all stakeholders which includes all listed entities and adds others such as parents, legislators, local government leaders, etc. Refer to the User Ecosystem in Exhibit – 1 – Specifications for additional insight.

**Solicitation EV00000210 Questions Set 5****Questions for OK**1. Technical Requirements 1, How many Districts will be included in your SIS?
	* Oklahoma has more than 500 school districts.
2. Technical Requirements 1, How many Schools will be included in your SIS?
	* There are more than 1800 school sites in Oklahoma
3. Technical Requirements 1, How many Students will be included in your SIS?
	* ~700k
4. Technical Requirements 1.6, How many SIS vendors are used by OK DOE?
	* OSDE currently has 7 SIS vendors
5. Technical Requirements 1.6, Have district and SIS vendors already agreed to help assist with this modernization effort?
	* SIS vendors must comply with Oklahoma requirements, and relationships have been built. Many of them are excited to start this work with the OSDE team.
	* Ongoing collaboration will occur throughout the entire process.
6. Technical Requirements 1, What is the data sizing in TB for the following:
	* Historic data (in Cloud storage)?
	* Each year of data totals approximately 3TB. OSDE has historical data back to 2012 for student level collections, and much further for other datasets. These datasets are currently in Azure blob storage and other Azure storage solutions.
	* On-Prem?
	* OSDE has a limited amount of data On-Prem.
	* in Azure?
	* OSDE uses Azure as their primary data storage for active data collections. Again, this is approximated at about 3TB per fiscal year.
7. Technical Requirements 1.11, Will all vendors be using the SIF standard for data elements? Or is it the expectation that data will need to be mapped to SIF?
	* All SIS vendors will be using SIF but other vendor types do not necessarily need to use SIF. OSDE is flexible on what standard format those datasets are sent in as long as they are using a defined standard and the data can be mapped directly to the data model.
8. Technical Requirements 1.3, Will there need to be manual uploads of data?
	* Yes. In some cases.
	* If so, for how much data? And at what frequency?
	* For some data collections, OSDE has not modernized past file upload capabilities. There are several systems that have an upload functionality. Some upload functionality is just to upload a file for evidence or something similar (think e.g., audits). In other cases, district staff members are entering data into a spreadsheet and uploading that data into the OSDE system for reporting purposes.
9. Technical Requirements 1, How many data domains do you have and what are they?
	* 22, and include Students, Parents/Guardians, Certified Staff, Support Staff, Cost Accounting, Assessments, Courses, Sections, Attendance, Discipline, Enrollments, Certifications, Accreditation, Allocations, Grants Management, Audits, Curriculum, Instruction, Child Nutrition, Program Participation, Special Education, and SoonerStart/Early Childhood. More are forthcoming as OSDE goes through the data modernization process.
10. Technical Requirements 1, What is the current Data Ingestion Process (API, Uploads, Manual?
	* Currently there are numerous ways districts, SIS vendors, and SDE integrate for data exchange, including manual uploads, SIF, manual extracts, SFTP, and APIs. We expect the bidder to provide a solution to meet these requirements outlined and develop towards a standardized solution as outlined in the RFP and in accordance with the Enterprise Reference Architecture.
11. Technical Requirements 1, What will the data refresh frequency need to be? (How often is data ingested?
	* Currently, data is ingested from approximately 4:00 AM to 9:00 PM every morning. OSDE anticipates new suggestions to be a part of the bidder's response.
12. Technical Requirements 1, How do districts currently certify their data is correct for State and Federal Reporting?
	* OSDE is expecting the bidder to propose the best solution regardless of current practices.
13. Technical Requirements 2.8, Which users will need access to the data quality dashboard?
	* OSDE is expecting the bidder to propose a solution to meet a tiered access approach.
14. Technical Requirements 3, How many reports do you currently have?
	* https://sde.ok.gov/reporting-requirements-calendar
15. Technical Requirements 3, How many reports will be needed in the new SIS system?
	* OSDE will work with the winning bidder to identify a reasonable number of reports to design, deliver, and release during contract negotiations with potential optional purchase options for further report development.
16. Technical Requirements 3, Will there need to be data extractions or queries for reporting?
	* In many cases, there will need to be ETLs and query scripting completed.
17. Technical Requirements 3, Will reports need row-level security/access?
	* In some cases, there will be a need for row-level security/access management in place.
18. Is OK DOE looking to replace the current Wave program?
	* The Wave is a group of applications and fed by a data collection process through Zone Integration Servers, SIF Agents, and the Student Information Systems. OSDE expects the bidder to provide the best solution to collect and report data for overall data modernization, which may include improving/replacing the Wave.
19. Technical Requirements 6, What are the current UI requirements for managing districts & schools, internal requirements, end-user?
	* The agency is looking for a single, silo-free system that is fully integrated, scalable, secure, efficient, and transparently reports needed data once it has been cleaned, audited, and determined “accurate”. As such, there are many UI requirements. OSDE recommends looking at Exhibit 1 with many of these requirements outlined.
20. Technical Requirements 6, What will the user interface need to include ? What does the user interface need to let the user accomplish?
	* The interface should be intuitive and easy to understand by End Users. OSDE will include LEA stakeholders during the development phase to ensure that the level of intuitiveness in the data modernization are detailed in Exhibit 1.
21. Technical Requirements 6, Will there need to be a Data Certification Process?
	* Yes
22. Technical Requirements 6, Will SIS functionality need to include transferring ownership, and managing IDs?
	* OSDE does not use a SIS. The transfer of student ownership and managing STNs is required.
23. Technical Requirements 6, Do you have your business rules well documented? Can you share those with us?
	* Business rules will be available to the successful bidder. Due to the sensitive nature of the data, OSDE will share those with the winning bidder.
24. Technical Requirements 6, How is accountability calculated at OK DoE? Do you have it documented?
	* Documentation will be available to the successful bidder. Due to the sensitive nature of the data, OSDE will share those with the winning bidder.
25. Technical Requirements 6, Who is the end-user of this modernized system? Districts? Schools? OK DOE?
	* Users are districts, schools, OSDE, stakeholders, legislators, and the general public. Refer to Exhibit 1 for additional details about users.
26. Technical Requirements 9, Are there specific data security issues you need to have addressed?
	* For security requirements refer to Exhibit 2 Technical Requirements section 9 Security and Privacy.
27. Technical Requirements 9, Will the SIS need IAM (Administrator Roles and User Management)?
	* Yes
28. Technical Requirements 9, How do you manage access to your application externally & internally?
	* OSDE expects the vendor to propose the best solution for access.
29. Technical Requirements 9, Do you need the new system to have role-based access to data/reporting?
	* Yes
30. Technical Requirements 9, How do you secure access to the application and data?
	* As this is a sensitive topic, please refer to the requirements in Exhibit 2. In addition, OSDE expects the vendor to propose the best solution for access.
31. Technical Requirements 9, Will there need to be data load tracking in the application layer/data layer/infra layer?
	* Yes
32. Technical Requirements 9, Will there need to be health of application & data components in the application layer/data layer/infra layer?
	* Yes. OSDE expects the vendor to propose the best solution for access.
33. Exhibit 3 – Pricing, Can you please elaborate on what OK DOE expects to see in the Price Justification section?
	* OSDE expects the vendor to follow the guidance in the RFP Instructions and provide an overall narrative as to the proposed solution and the expected costs. A reasonable alignment between the solution and costs should exist.
34. Bidder Instructions, Paragraph 8.2.K, In Section Eleven: Financial Information, is OK DOE looking for anything specific or just a general overview about the financial position of the bidder?
	* OSDE/OMES is looking for a general overview of the financial position of the bidder.
35. What are the current tools being used or considered for:
	* Cloud provider
	* Data warehouse
	* ETL
	* API/UI
	* Reporting/BI/visualizations
	* Data Governance
	* Data Catalog
	* Security
	* Role-based access
	* Please see the Enterprise Reference Architecture as the solution will need to align to this.
36. Are international resources permitted to work on this project?
	* Specific roles: Data engineers, data architects
	* No, we have an Off-Shore data standard that prohibits any systems or data to be accessible from outside the continental U.S.
	* However, please refer to Exhibit 2 Technical Requirements 9.1 Security and Privacy. The solution must meet all required federal and state regulations related to education data security and privacy and the handling of personally identifiable information (PII).
37. What is the overall budget for the project?
	* OSDE has not published the modernization budget.
38. What types of data governance do you have in place?
	* OSDE possesses a three-tiered governance system comprised of data, IT, and privacy and security. Over the past year and a half, the data governance has developed a strong presence, is building necessary policies and procedures, and making great strides in their work. The IT and privacy and security governance aspects also are making progress and will fully develop once this work is underway.
39. Does OK have an existing call center that will be leveraged in this project?
	* OK does not have a call center for this project.
40. Can you please clarify where exactly in the portal we are to upload the consolidated bid packet itself? Should it be uploaded as an attachment to the "Event"?

Attach documents to the Line comments and Attachments see below:**Solicitation EV00000210 Questions Set 6**1. **Bidder Instructions H. Section Eight: Response to Speciﬁcations and Requirements** - Can OMES/OSDE please clarify which security certiﬁcation and accreditation assessment is required?
	* The excel document titled State of Oklahoma - Third-Party Vendor Security Assessment must be completed and submitted with the bid response.
2. **Bidder Instructions D.i. VPAT** - We plan to use the 'VPAT 2.4Rev WCAG (March 2022)' template found on ITIC.org (https://[www.itic.org/policy/accessibility/vpat)](http://www.itic.org/policy/accessibility/vpat%29)

- is this an acceptable version?* + The VPAT template you have identified would be an acceptable template.
1. **Exhibit 1 Speciﬁcations A.4.2** - Does OMES/OSDE intend to provide Level 1-3 Customer Support after the pilot period and the period of parallel deployment has ended?
* **Speciﬁcations A.4.2 reference customer support** during the pilot period and the period of parallel deployment of the new System. The OSDE expects to develop a customer support plan that will include technical resources (level 3) from the bidder and level 1 and 2 support is expected to come from the OMES/OSDE team. The OSDE will work with the winning bidder to determine what types of users will be at each level, however, OSDE expects the bidder to be available to work directly with highly technical users on bugs and hotfixes at the Level 3 level.
1. **Exhibit 1 Speciﬁcations B.1 Analytical Tools and Exhibit 2 Technical Requirements 3.9, 3.10, 3.11** - Analytical tools are required to fulﬁll Exhibit 2 Technical Requirements 3.9, 3.10, and 3.11. Can OMES/OSDE please conﬁrm that pricing should not be included for Analytical Tools per Exhibit 1 Speciﬁcation,

B.1 Analytical Tools?* + B.1 - Do not include pricing for such options in this **Bid section**. All pricing should be included in Exhibit 3 – Pricing.
1. **Exhibit 1 Speciﬁcations xii. Major Activities** - Does OMES/OSDE have a desired timeline for each of the major activities outlined in this section?

OSDE expects the bidder to include timelines to meet the logical progression of their solution.1. **Exhibit 2 Technical Requirements CR 1.1. Cloud Hosting** - Does the transfer of system components to OMES-controlled cloud environments apply to SaaS COTS solution components? Is OMES administrative access to vendor cloud environments sufﬁcient?
* The OSDE will consider SaaS COTS providers. In this case, licensing terms and all financials need to be fully explained in detail within the pricing section of the proposal.
* Any exceptions to terms need to be submitted on the Exceptions to Terms document at the end of the Bidder Instructions.
1. **Exhibit 2 Technical Requirements CR 2.4 - OMES Data Hub** - Can OMES/OSDE please provide additional technical interface information about the Data Hub?

The data hub that you are asking about has been developed within the Google Cloud Platform in a Hub and Spoke type configuration. Several different state agencies own spokes that lead to a central repository of authorized shareable data/information. OMES has also developed a web application that allows for individual agencies to govern that data and share responsibly and in accordance with federal and state regulations and statutes.1. **Exhibit 2 Technical Requirements 5. System Administration** - Requirement

5.1 states, The Solution should support and integrate with existing state and district protocols for user authentication and account provisioning. Can OMES/OSDE please provide additional information regarding the protocols for user authentication and account provisioning in place today?* All current users have their own accounts. OSDE expects the bidder to provide the solutions that meet the requirements of the RFP.
* All state level users are authenticate and provisioned through Active Directory. Currently, all external end-users sign-up for a SSO account that is run by a database solution. OSDE expects a CIAM solution to replace this current SSO process.
1. **Attachment A Final Solicitation 1. Contract Term and Renewal Options** - Can OMES/OSDE share the period of performance and speciﬁc budgeted amounts for the Data Modernization effort? Is the project fully funded for the 1-year initial contract term and renewals? Please clarify.
	* OSDE expects appropriate pricing based upon the proposed solution.
	* The project is fully funded for the entire project, if renewed.
2. **Third Party Vendor Assessment, Risk Matrix** - Can OMES/OSDE please provide the headings for the rows and columns on the Risk Matrix within the Third Party Vendor Assessment, as well as guidance regarding any information the vendor should provide in this tab?
	* The Risk Matrix tab is for our security team to use to show the residual risk rating based on the answers provided.

**Solicitation EV00000210 Questions Set 7**1. Is there a timeline for the project? There is none listed in the RFP.
	* OSDE expects the bidder to develop a timeline that meets the needs of the solution.
2. Is there a budget that can be disclosed?
	* OSDE has not published the modernization budget. OSDE expects appropriate pricing based upon the proposed solution.
3. Who is the current SIF Vendor? Will they be available as needed for the Wave project?
	* OSDE is not a single vendor state. State approved vendors will be available to participate when required by OSDE.
4. Is there a current incumbent? If so, who is the incumbent?
	* There are some incumbents who are doing some aspects of this work, OSDE desires a modernization of the data systems and has spent two years defining business requirements, cases, and a proposed architecture to meet the current needs.
5. Exhibit 3 Pricing: What is the total budget for this project?
	* OSDE has not published the modernization budget.
6. Since the State is open to COTS and SaaS solutions, would the State consider a proposal that provides the State a perpetual royalty free license to the COTS technology for the State’s use as an alternative to a proposal that provides the state with ownership of the COTS solution? As the State can probably imagine, providing the State with ownership of a COTS solution is problematic where perpetual licenses to the same COTS solution have already been sold to other states. We would like the State to have the opportunity to license the robust, proven, regularly enhanced data management solution already being used by many other states.
	* The OSDE will consider SaaS COTS providers. In this case, licensing terms and all financials need to be fully explained in detail within the pricing section of the proposal.
	* Any exceptions to terms need to be submitted on the Exceptions to Terms document located at the end of the Bidder Instructions.
7. Requirement 2.15: Is the new WAVE system to create unique identifiers for staff members as well as students?
	* Potentially, based on the bidder’s solution.
8. Requirement 2.15: How many STNs are currently managed by WAVE? What is the current format of the STN?
	* > 1,400,000, currently a 10 digit numeric value
9. Requirement 2.15: Will new STNs need to be created for existing students, or will the State prefer to keep the current ones?
	* OSDE will keep existing STNs
10. Requirement 2.15: Regarding the STNs, will all current STNs be migrated to the new WAVE system?
	* STNs will be migrated
11. Exhibit 2, Section 2. Data: Please provide a list of all data domains to be integrated into the new Wave system
* 22, and include Students, Parents/Guardians, Certified Staff, Support Staff, Cost Accounting, Assessments, Courses, Sections, Attendance, Discipline, Enrollments, Certifications, Accreditation, Allocations, Grants Management, Audits, Curriculum, Instruction, Child Nutrition, Program Participation, Special Education, and SoonerStart/Early Childhood. More are forthcoming as OSDE goes through the data modernization process.
1. Exhibit 2,1.6: Please provide a list of all student information systems used in the state.
	* OSDE projects that there will be 6 active vendors in the state at the start of work. Vendor names may not be released during the bid.
2. Exhibit 2,3. Reporting: Does the state have a preferred dashboarding/BI application?
	* State approved applications include SSRS, PowerBI, Google, Data Studio, and Looker. Please refer to the Enterprise Reference Architecture for alignment.
3. Exhibit 2, 3.1: Is the State open to a COTS data warehouse?
	* Refer to Exhibit 1, 1.xi.b
4. Exhibit 2, 3.1: Is the State looking to install the CEDS data warehouse?
	* OSDE expects the bidder to propose the best solution based upon the RFP requirements and specifications.
5. Exhibit 2, CR 4.5. Can the state provide the full list of standard reports that the new WAVE system will need to create?
	* Report lists and scope will be provided to the successful bidder.
6. Exhibit 2, CR 4.5: How many reporting/dashboard users will there be? How many will require ad-hoc capabilities?
* Internal ~100,000
* External ~ 100,000
1. Exhibit 2, CR 4.5.c: Are MOU/ORRs services that will be delivered by OSDE staff? Who de-identifies the data?
	* OSDE is expecting the bidder to propose the most efficient and effective way to process and deliver MOU/ORRs.
2. Exhibit 2, 2.11: What single sign-on system will the new system have to integrate with?
	* OSDE is expecting the bidder to propose the best solution based upon the RFP requirements and specifications
3. Exhibit 2, 5.1: What are the existing state and district protocols for user authentication and account provisioning?
* User account provisioning for state employees and contractors requires DSR approval as well as request submittal via the OMES SNOW Onboarding form. The onboarding form will need to include any permissions that the end user needs in order for the access to be granted. The end user will be provided a uniquely identifiable ID which will be used for authentication. District users log into a SSO environment and each Superintendent access is handled by the OMES service desk. Each superintendent then authorizes an individual within the district to provision district staff into the SSO. OSDE is planning forward and would like to see a CIAM solution implemented for external stakeholders.
1. Xii: Major Activities: What is the desired timeline and launch for the new replacement WAVE system?
	* OSDE is expecting the bidder to propose the best solution based upon the RFP requirements and specifications
2. A.3.3: Does the State have preferred training models (e.g., direct to user vs train the trainer, in-person vs webinar)?
	* OSDE expects the bidder to offer multiple modes of training.
3. A.4.2: Can the State define Level 1, Level 2, and Level 3 Customer Support? What types of users are supported at each level?
	* **Speciﬁcations A.4.2 reference customer support** during the pilot period and the period of parallel deployment of the new System. The OSDE expects to develop a customer support plan that will include technical resources (level 3) from the bidder and level 1 and 2 support is expected to come from the OMES/OSDE team. The OSDE will work with the winning bidder to determine what types of users will be at each level, however, OSDE expects the bidder to be available to work directly with highly technical users on bugs and hotfixes at the Level 3 level.

**Solicitation EV00000210 Questions Set 8**1. How does OSDE envision using this platform to support MTSS in districts across the state?

|  |
| --- |
| * OSDE expects the solution to meet the requirements of the RFP. Refer to Business Drivers in Exhibit 1 i.
 |
|  |

1. Would OSDE consider proposals from SaaS providers that could leverage existing software to meet the needs of this RFP? If so, would OSDE be open to revising terms so that vendors would retain source code for existing software?
	* The OSDE will consider SaaS COTS providers. In this case, licensing terms and all financials need to be fully explained in detail within the pricing section of the proposal.
	* Any exceptions to terms need to be submitted on the Exceptions to Terms document located at the end of the Bidder Instructions.
2. Is OSDE open to working with multiple vendors to complete this project?
	* + OSDE is open to the solution that will most efficiently meet the requirements of the RFP, including multiple vendors.
3. How does OSDE envision using this platform to provide incident tracking?

Please refer to Exhibit 2 – Technical Requirements 5.5The solution should include incident logging, tracking, and management, including a user ticketing system for OSDE and OMES users as well as users in schools and districts.1. How does OSDE envision the direct users (listed on page 4 of the Specifications document) of the platform will use the system?
* Direct user will use the system for data input/output, reporting, analysis,
* Monitoring, etc. In the diagram, the flags demonstrate user input and output. User stories have been developed for several users.
1. How often does OSDE envision the indirect users (listed on page 4 of the Specifications document) will use the platform? Will it be a primary or daily tool?
* OSDE envisions indirect users to use the platform daily.
1. What does OSDE envision the indirect users (listed on page 4 of the Specifications document) of the platform will use the system for?
* OSDE envisions Indirect users to use for reporting purposes, data analysis, monitor quality and monitor quality metrics at student group, school, tricks and monitor quality metrics at student group, school, tricks at student group level, school level, and district levels, among other uses.
1. What challenges are currently faced by OSDE, districts, and schools related to reporting?
* Some of the challenges include:
	+ Technology changes
	+ Outdated infrastructure and data model
		- Siloed web applications that parse out data collections instead of a common data collection method.
	+ Challenges with data collection
		- Ad hoc efforts to correct identified issues
		- No sole source of data
		- Student Identifiers (STN)
	+ From a reporting perspective this has impacted real-time data in reports (e.g., refreshed data from the database), need for increased speed, improved ease of use and added functionality, and enhanced reporting tools.
1. What is the current reporting burden experienced by OSDE, districts, and schools?
* OSDE expects the vendor to propose an overall streamlined solution to manage a large number of state and federal reports from numerous SDE departments.
1. How will schools and districts use the platform to improve student outcomes?
	* + Refer to Exhibit 1 Specifications ix. Required Solution Overview. It is OSDE’s goal to improve the efficiency, data quality, utility, and security of data collection, data processing, data reporting, and longitudinal data management to support schools and districts improve student outcomes.
2. When does OSDE want the new platform to go live?
* OSDE expects the bidder to purpose the best solution and implementation timeline.
1. What is the anticipated budget for this program?
* The modernization budget is not published.
1. Regarding Identifiers: How will the data be submitted? Is the State's intention to use SIF to assign staff IDs?
* Use of SIF is required for the connections directly from SIS vendors to the State Education Agency. All other open-source education Where possible, all other open-source education data standards can be used for all other feasible solutions data standards can be used for all other solutions, where feasible.
* Some Staff Id’s have been established in other systems. SIF doesn’t currently assign those agency system does.
* OSDE anticipates that a new modernized system will provide a solution for this.
1. Regarding IDs: Will all IDs be assigned via SIF?
* Currently, that is not the case. Student Information System SIF agents currently assign GUIDs for each record sent to the state. OSDE expects the bidder to propose the best solution and implementation timeline.
* Use of SIF is an Oklahoma statutory requirement.
* Students will retain their current State Testing Number (STN) in the data migration and will continue to use similar format.

 **Solicitation EV00000210 Questions Set 9**1. In Exhibit 1, A.2. Project Management, A.2.2.3. it states “Provide the names, experience summaries for key personnel, and a summary of their responsibilities, including any subcontractors. Specific required roles in the staffing plan, Full-time program lead, full-time project manager, full-time technical manager, quality assurance lead, and privacy security officer. Please define each of the roles and expected responsibilities, including defining what is intended by ‘full-time.’* The bidder should provide the summary of the responsibilities of the key personnel. As a general guide, a full-time employee for state agencies is generally defined as someone who works 40 hours per week.

2. Please identify any specific elements of the existing infrastructure that are working, and you would not want to modify or replace. * OSDE will provide the information to the winning bidder.

3. Similarly, please identify any specific technologies or platforms that need to be modified or replaced and why, and any new technologies you want to implement.* OSDE will provide the information to the winning bidder.

4. Can you share any current baseline metrics and target future state metrics aligned with the Measures of Success in Exhibit 1, i.v. For example, how you would measure the achievement of improved efficiency, timeliness, ease of automation, reduced manual effort, quality, and response time?* The requirements around the measures of success include the current goals and will be finalized with the winning bidder.

5. Are there any specific ESG outcomes you are looking to achieve?* OSDE expects solutions to meet the requirements of the RFP. Goal metrics are outlined in Exhibit 1.

6. Please define the OSDE and OMES roles and responsibilities of team members expected to collaborate on this project with us.* OSDE will provide the information to the winning bidder.

7. In Bidder Instructions, 8.2. B. Section Two: Required Forms, Certifications and Disclosures, iv., it states, “Certificate of Insurance Workers’ Compensation form.” Can you please clarify if you want Bidders to submit a statement/certificate of insurance with their bid in this section, or if they should provide a specific form. If a specific form is required, can you please provide. Provide your certificate of insurance as proof of the required insurance and submit with your bid response.8. Is your goal in working with an implementation partner to ascertain the best cloud hosted analytics platform available to meet OSDE needs? Is this RFP part of a formal software selection process? If so, who are you working with as a software selection partner?* OSDE expects the bidder to provide solutions that meet the requirements of the RFP. This RFP is an independent project to replace, update, and improve upon OSDE's current data management platform, the WAVE, and overall modernization of data applications, which is operating as the core access point for a range of databases, software applications, tools, and reports.

9. What is meant by the comment “Favor data warehouse platforms that support documentation alongside data” from Exhibit 1 Specifications, iii Goals of the Modernized Architecture, e Discoverable Data, second bullet?* It means the OSDE will desire platforms that have built-in features or tools to facilitate data-related documentation.

10. What can you tell us about “existing state and district protocols for user authentication and account provisioning”? Is it safe to assume that all users who access the reporting solution will have an account in a central cloud identity solution (such as Azure AD)? Are there custom identity solutions in the environment which should be considered?* All current users have their own accounts. OSDE expects the bidder to provide the solutions that meet the requirements of the RFP.
* All state level users are authenticate and provisioned through Active Directory. Currently, all external end-users sign-up for a SSO account that is run by a database solution. OSDE expects a CIAM solution to replace this current SSO process.

11. For the REST endpoints which you are piloting with SIS vendors, what problem are these endpoints intended to solve? Are they an improved means of exporting data from SIS, or something else?* OSDE expects the bidder to provide the solutions that meet the requirements of the RFP.

12. Can the existing matching algorithms for STN Matching and Scoring be re-used, or is there a reason they cannot be?* OSDE expects the bidder to provide enhanced solutions that meet the requirements of the RFP. The STN matching and scoring, and all other applications, that are currently in place are able to be re-used if the solution can be integrated efficiently.

13. Exhibit 1 indicates that the “system should be up 99.9% of the time between 3AM and 9PM central time.” Exhibit 2, requirement 8.4 indicates that the solution should be available 24/7/365 with an uptime of 99.8%. That would suggest that the system could only have 2m 53s of downtime per day. Which is it?* End users should expect to have access to the system 99.9% of the time between 3am and 9pm CT.
* The solution should be running 24 hours, 7 day a week, 365 days per year, allowing for scheduled maintenance.

14. As we would be creating a custom solution, we do not have a VPAT link to provide at this time – is that required? It is listed as a required in 8.1.D.ii, but then is listed as “if” required in 8.2.H. What defines whether it is required or not? Regardless, if we can’t provide one, does that disqualify us at this time? We would be able to create one, at a later date once we have completed development of the solution and tested it for compliance.* If a VPAT link is not available, an explanation would be expected in the response.

15. Can multiple organizations partner on one response?* Yes.

16. How much of the potential scope needs to be completed on-site?* The bidder should develop the solution within a cloud environment.
* If this question is referring to the winner bidder conducting all of the work on-site, this is not an expectation. There is an expectation that the winner bidder would need to be on-site from time-to-time.

17. Can responding organizations propose alternative engagement approaches/scope as a part of the response? * Bidders may propose alternative engagement approaches/scope as long as the solutions proposed are within the scope of the enterprise reference architecture and all state policies and procedures.

18. Is there a proposed budget for this project?* The modernization budget is not published.

 **Solicitation EV00000210 Questions Set 10**1. Which, if any, Wave Accountability and Reporting System items are to be kept, and which are to be retired?
* All Wave and Accountability Reporting assets can be kept or replaced. That would be up to the bidder to suggest what can be leveraged and what needs to be replaced in order to create a seamless experience and efficient data flow.
1. Can OSDE share the overall budget for the WAVE Accountability and Reporting System project?
* OSDE has not published the modernization budget.
1. Can OSDE elaborate on the budget for each project year (initial year and 4 one-year options)?
* OSDE has not published the modernization budget.
1. Exhibit 1 – Specifications, section 1. vi describes sample user profiles, including both “Direct Users” who require a login, and “Indirect Users” who do not log in.
* Please provide expected user counts for each of the direct users defined in the RFP below (both total counts and expected maximum concurrency).
* Data Analyst
* Data Director
* District Administrator
* Local Education Agency (LEA) Superintendent
* EDFacts Coordinator (federal reporting)
* Auditor
* Compliance Monitor
* Program Officer

The direct users listed here expected number would be thousands or more.1. Exhibit 1 – Specifications, section 1. vi describes sample user profiles, including both “Direct Users” who require a login, and “Indirect Users” who do not log in.
* Please provide the expected volume for the indirect users, including both average and peak concurrency.
* Expected volume of indirect users is in the thousands or millions as we look to improve data accessibility, transparency and literacy.
* Bidder should also anticipate Indirect users to have different levels of data processing abilities.
* Will the indirect users simply consume prebuilt reports or do they require the ability to query and download data and develop ad hoc reports?
	+ ODSE expects the vendor to anticipate a variety of data uses and propose the best solution for each potential access need.
1. Exhibit 1 – xi. Expectations for Suppliers’ Work with the State
* The OSDE enterprise architecture lists Python and R as part of the analytics environment.
* Can you provide details about the R and Python packages that might be used for analysis in this solution?
* OSDE/OMES do not have a lot of current analytics using these analytics environments, at this time. OMES has a data services team and OSDE and OMES will work with the winning bidder to determine what packages are needed and get them in place, where possible and after a thorough security review.

 1. Exhibit 1 – xi. Expectations for Suppliers’ Work with the State
* Are there components of the OSDE enterprise architecture that are changing or being retired as part of this project?
* The enterprise reference architecture is a living document and technologies can be added or taken from at different times. That being said, the enterprise reference architecture is currently very firm. OSDE is not aware of any future changes or retirement of any technologies on the enterprise reference architecture.
1. Exhibit 1 – Goals of the Modernized Architecture, Section a., Improve the Timing and Frequency of Data Validations describes Validations
* How many SIF validations and how many OSDE validations are in place today?
* In what language or software product are they written?
* What additional SIF and OSDE validations are expected to be developed by the vendor?
* Will validation metrics (to be surfaced on the dashboard) be defined and provided by OSDE?
* Will quality metrics (student, school, district, and SIS levels) be defined and provided by OSDE?
	+ - There are approximately 400 validation rules in place but OSDE expects many more validation, consistency checks, completeness checks, and other types of validation to be added throughout the project.
		- The validation rules engine that is currently in place can provide validations in many different forms, including C#, SQL, defined acceptable option sets, and several other methods to process validations.
		- This is tough to define at this time. This area will need some significant attention. OSDE will work with the winning bidder to determine the best path forward and engage with other stakeholders to inform this work as it progresses.
		- The validation metrics that are needed will be defined and provided by OSDE, throughout the project timeline.
		- Al OSDE or OSDE will provide all data quality metrics l data quality metrics will be provided by OSDE or OSDE will work with Stakeholders to identify those metrics.
		- OSDE expects the bidder to propose the best solutions to achieve the goal of Improve the Timing and Frequency of Data Validations describes Validations regardless of current practices.
		- Current process will be available to the successful bidder.
1. Exhibit 1 – Measures of Success – Goals, item 3, describes Automated Reports
* How many existing automated reports are in place today (and in what software product/language)?
* Is the vendor expected to recreate the existing automated reports?
	+ OSDE expects bidder to propose a solution regardless of current practice. Some of the

automated reports will need to be replicated.* + If not, does the vendor need to migrate these reports to the new data management solution?
		- OSDE expects the bidder to propose the best solutions to achieve the goal of Automated Reports regardless of current practices.
		- Current process will be available to the successful bidder
1. Exhibit 1 – Data Management System Core Functions, section Data Reporting, describes required federal and state reports.
* How many existing federal and state reports are in place today (and in what software product/language)?
* There are over 80 existing reports in place in a variety of products. OSDE expects the bidder to propose the best solution with Exhibit 1 Goals in mind.
* Is the vendor expected to recreate the existing federal and state reports
* If not, does the vendor need to migrate these reports to the new data management solution?
* OSDE expects the bidder to propose the best solutions to achieve the goal of Data Reporting regardless of current practices. Federal and State reports are a key part of the overall data modernization effort.
* Current process will be available to the successful bidder
1. Exhibit 1 – Data Management System Core Functions, section Longitudinal Data Management, discusses Rollover
* (Also reference Exhibit 2 – Technical Requirements, 4.1)
* Please describe the current Rollover process in detail.
* What specific changes to the data need to occur?
* What validations/quality checks are expected?
	+ - OSDE expects the bidder to propose the best solutions to achieve the goal of Longitudinal Data Management regardless of current practices.
		- The annual system rollover is currently completed in July. There are many processes and procedures that are completed, like, database archival, truncation of several tables to reset for the next school year. This is done for many SIF objects and tables. We have other systems that also “roll-over” but that process is very similar in nature.
		- Data will need to be
1. Exhibit 1 – Data Management System Core Functions, section Longitudinal Data Management, describes “interoperation with state’s longer-term data warehousing solutions”
* Please define what is meant by “interoperate with state’s longer-term data warehouse solutions”
	+ Does this simply mean an extract from the new data management solution needs to be pushed to the state data warehouse?
	+ What would be the expected frequency and scope of any interoperation?
	+ Is a data mapping provided by the state?
	+ What are the integration points with the state’s longer-term data warehouse solution? For example, does the long-term solution support API calls, flat file exchanger, etc.
	+ How frequently do you envision the data exchange between systems to take place?
		- Interoperability using SIF, CEDS, Ed-Fi, and other open education data standards, API, SFTP – OSDE expects the vendor to propose the best solutions for interoperability between various data management systems.
		- Current process will be available to the successful bidder.
		- OSDE desires to modernize their data systems and expects that bidders will provide a solution to accomplish this.
		- The goal of student IDs and state testing number (STN) regardless of current practices.
		- Current process will be available to the successful bidder.
1. Exhibit 1 – Certifications (multiple mentions throughout Exhibit 1)
* Please describe the expected data certification process, as well as any changes to data or metadata that need to occur as part of this process
* Please describe the expected behavior for the generation of dataset certifications
	+ Who is certifying the data, and at what level (row subset of a dataset, full dataset, district, etc.)
	+ What information does the vendor need to capture or generate?
	+ To whom is the certification information made available?
		- Certification requires a 3-tiered approach. Confirmation (school), certification (district), and Final (OSDE).
		- Certified data may become a public record, part of Federal reporting, district use, Accountability, Data request, MOU, etc.
		- OSDE expects the bidder to propose the best solutions to achieve the goal of Certification regardless of current practices.
		- Current process will be available to the successful bidder.
1. Exhibit 1 – Goals of the Modernized Architecture, section c. Seamless Certifications mentions Snapshots
* Please describe the “Districts will sign off on various snapshots (rollovers, federal reporting, etc.) throughout the year via a dashboard” requirement
	+ What are snapshots, and are they different than data submissions from a district’s SIS
		- Do the snapshots need to be captured/stored, and if so, are they to be accessible to others
		- Is the “sign off” process a part of data validation, a part of the certification, a part of the user ticketing system, or something else?
			* OSDE expects the bidder to propose the best solutions to achieve the goal of Snapshots regardless of current practices.
1. Exhibit 1 – Major Activities, Activity 3 Pilot Testing discusses Recruitment
* Please provide additional information for the requirement “Recruit pilot districts and agency stakeholders to utilize the Modernized Data Management System during a defined pilot period”.
	+ What is the ‘recruitment’ expectation of the vendor?
	+ How many districts are expected to participate in the pilot?
		- ODSE expects the vendor to propose a successful implementation model involving SIS and district stakeholders during a pilot period.
1. Exhibit 1 – Major Activities, Activity 4 Parallel Deployment
* How long does OSDE require this phase (Parallel Deployment) to be run before transferring to OSDE/OMES?
	+ ODSE expects the vendor to propose a successful implementation timeline and methodology to ensure success of OSDE and District partners.
1. Exhibit 2 – Technical Requirements, 1.11 – Approved SIS Vendors
* Please describe what behavior the districts would expect in order to select an approved SIS vendor within the system
* Please describe the expected behavior when OSDE wishes to add or removed an approved vendor
	+ State approved vendors must be able to prove successful SIF interoperability for all required elements and meet state and federal reporting requirements for the district/schools. SIS vendors must also pass a one-year operational validation with one district before that entity can expand to another school district.
1. Exhibit 2 – Technical Requirements, 5.5 - User Ticketing System
* Please describe the expectations, behavior, and scope of the ‘user ticketing system’
	+ Will only direct users of the new system be able to initiate incidents to be tracked?
	+ What kind of incidents will need to be tracked? Does this include validation errors and warnings, or is the ‘user ticketing system’ separate?
		- ODSE expects the vendor to propose an efficient and viable user ticketing system to OSDE, districts, and schools.
		- Incident tracking would be in terms of data consistency measures, data validation errors, district reporting status on each set of data collected, a confidence indicator for each data point, system overall status are some examples of types of incident tracking expected. OSDE also will work with the winning bidder to incorporate tracking within the system and determine exactly what is needed as the project starts to take shape.
1. Exhibit 2 – Technical Requirements, 4.2 states that the solution should maintain multiple years of data.
* What is the estimated % growth per year?
* How many years of data are required to retain in the vendor’s solution?
* A multi-year data system will add 1 yr of data each year. So, the amount of space for the 1st year is the gauge for annual growth. At a minimum, two years date, at most five years.
* OSDE expects the bidder to understand the need for multi-year data in the real-time db and to propose the best solution to accomplish multi-year data access.
1. Exhibit 2 – Technical Requirements, 4.3 states that data should be transmitted to the State’s long-term data warehouse.
* Can OSDE provide details on expected data formats to send data into the data warehouse? Is this also SIF?
* What is the desired frequency for transmission? Annually, monthly, etc.
	+ Data transmission is currently daily, but the OSDE would like to see that timeline as close to real-time as possible. The OSDE will work with the winner bidder to do an initial level set and then set goals as development is completed.
	+ OSDE expects the bidder to propose the best solution for a long-term data warehouse using a variety of data formats.
1. Exhibit 2 – Technical Requirements, 8.2 states that OSDE stores approximately 3TB of data annually.
* What is the size of the data that would need to be migrated to a hosted solution’s environment?
* Can OSDE provide a breakdown of the data set sizes within the 3TB?
	+ OSDE will provide the detailed information to the successful bidder.
1. Exhibit 2 – Technical Requirements, 2.5 states that each pipeline should be able to leverage external APIs for specific processing steps.
* How many external APIs should the system accommodate? There are over 80 applications
* Are there any examples of these APIs or external data sources that you can share?
	+ OSDE expects the vendor to propose solutions that meet the needs of incoming data, propose solutions to bring as many data collections in with APIs and propose the number of pipelines that would be needed to support the data ingestion.
1. Exhibit 2 – Technical Requirements, 1.3 states the solution must support bulk uploads.
* Can you provide further details about the size and type of the data that would be uploaded?
	+ - There are several web-based applications that require EUs to input data sets into .xls/.xlsx/.csv format and then those files are uploaded to a portal and ingested into the OSDE database/table. The size of typical files differ between systems/applications.
1. Exhibit 2 – Technical Requirements, 2.2 states that the Solution should support distinct pipelines specific to the type of data being processed.
* How many pipelines would the solution need to accommodate?
	+ OSDE expects there to be more than two pipelines. Some of that architecture will be determined through this proposal, how many pipelines are needed will be one of those solutions that will need more discussion between the winning bidder, OMES, and OSDE.
* Aside from the SIF data, are there other data types that would need to be accommodated?
	+ SIF data is not the only type of data that is collected by the OSDE. SIF data is merely one of many collections, albeit the largest within the OSDE. Many of the current data collections are homegrown with no central data model across systems.
* OSDE is expecting the bidder to propose the best solution and be able to support CEDS, SIF, and Custom formats
* Do you envision any data being leveraged across pipelines or would each pipeline be self-contained to only the specific type of data for the given pipeline?
	+ OSDE envisions that all pipelines will have the same end point of some storage asset or assets formed together to create an efficient data flow and designed to be a fully-integrated solution.
1. Exhibit 2 – Technical Requirements, 2.11 states the dashboard solution should leverage Single Sign On (SSO) for authentication.
* What single sign-on technologies are available to be used?
	+ OSDE expects the bidder to propose the best solution for single sign on and ensure it aligns with the Enterprise Reference Architecture.
1. Exhibit 2 – Technical Requirements, 2.15 states that student objects must have unique identifiers across the state (i.e., Student Testing Numbers). The system must have a component for utilizing and verifying these identifiers.
* Can you provide more details on what the verification process entails?
	+ OSDE expects the bidder to propose the best solution to handle unique identifiers and a method of verification.
1. Exhibit 2 – Technical Requirements, 3.1 states the reporting solution should be based on a modern data warehouse that supports reporting on semi-structured data from multiple sources.
* Is there a current and/or preferred database for storing this?
	+ There is not at this time.
* Please provide the initial storage size.
	+ A single year of data collected by OSDE is sized at approx. 3 TB. Currently, OSDE houses, approx. 50TB of data
* Please provide the percent rate of change over time.
	+ Considering that OSDE has many systems that are not integrated and the OSDE does not currently utilize a semi-structured or a true structured environment, calculating the percentage rate of change over time. OSDE understands that the inability to answer this question could impact budget, time, and effort estimates in this area.
1. Exhibit 2 – Technical Requirements, 5.4 states the solution should support automated data backup at a cadence to be defined by OSDE and on demand.
* Can OSDE provide more details around the desired cadence?
	+ OSDE has a nightly backup process. OSDE will work with the winning bidder to determine the best practice around backups and the proper cadence for the system that is developed.
1. Exhibit 2 – Technical Requirements, 5.6 states the Solution should support realtime and nightly/daily data refresh through automated data exchange protocols.
* Can you elaborate on the requirements for “realtime” in this context?
	+ OSDE’s current definition and expectation of “real-time” is within an hour for CRUD operations within the local SIS for data elements required to be collected by the OSDE.
1. Exhibit 2 – Technical Requirements, High-Level Components Tab contains “For the foreseeable future, OSDE will need to receive data sent through the current SIF vendor. As part of implementation, SIF records received will need to flow in the current systems and in parallel into the data pipeline and quality control dashboard of the Supplier's solution. Current SIF vendor systems will support events and/or data changes in their data stores.”
* Who is the current SIF vendor? SIF vendor will be provided to successful bidder.
* How often do changes in their data stores occur? The data stores are within the Oklahoma Environment and they change constantly (second to second) during the day.
* As changes in events or data could impact vendors solutions, how will those vendors be notified of changes? OSDE expects the bidder to propose the best solution for this particular requirement.
1. Exhibit 2 – Technical Requirements, High-Level Components Tab states “The state data strategy requires that any data shared between state agencies is published via the state data hub in GCP. Contractual agreements and permissions are managed via DASH in the data hub.”
* Is it OSDE’s expectation that the vendor publishes the data to the state data hub, or will OSDE handle this?
	+ The bidder should consider solutioning and publishing to the state data hub as part of this RFP.
* If the vendor is expected to publish the data, can OSDE provide more details on how this should work?
	+ The bidder should respond based upon the requirements outlined in the RFP and aligned with the Enterprise Reference Architecture.
1. Exhibit 2 – Technical Requirements, High-Level Components Tab states, “Adaptor - In a pipeline, the adaptor reads data for a specific type of data such as JSON or binary data. Custom adaptors can read specific data or file formats.”
* Can OSDE provide a complete list of file formats the new system will need to read from?
	+ The solution should be flexible enough to read from all standard file formats, such as, JSON, XML, XLS, XSLX, PDF, DOC, etc.
1. Exhibit 2 – Technical Requirements 8.2 the requirement states, “The Solution should support minimum system usage of millions of event records daily from more than 500 school districts. Currently, the OSDE stores approximately three terabytes of data annually.”
* Will these millions of event records be batched by data sources or will these be coming individually in real time?
	+ Currently, most of these event records are batched but there are individual records that are sent from SIS vendors via SIF\_Event procedures. Please review the SIF specification for more information on how that process works. The bidder should provide a solution regardless of how this is currently accomplished.

**Exhibit 2 – Technical Requirements, Both Tabs**1. Exhibit 2 – Technical Requirements, High-Level Components Tab CR 3.1.c. states “OSDE Validator -- Validate and verify that messages meet OSDE department needs (e.g. Accountability, Child Nutrition). For example, longitudinal verification of records against previous submissions in current or prior years for transfers and graduation. These types of validations should support complex logic and may require referencing internal data stores for information.”
* Can you provide more details about this process? For example, what is an example of a message that meets OSDE department needs?
	+ OSDE expects the bidder to propose a solution to meet the needs of OSDE validation as defined in CR 3.1.c regardless of current processes.
1. Exhibit 2 – Technical Requirements, High-Level Components Tab, CR 2.2. ReST Endpoints section states “the ReST endpoints will need to support OMES monitoring and security tooling.”
* Can OSDE elaborate on the monitoring and security tooling the solution needs to support?
	+ OSDE will provide the information to the winning bidder.
1. Exhibit 2 – Technical Requirements, High-Level Components Tab CR 2.3. states “OSDE receives data from SFTP file drops. For example, assessment and certification data are received this way. The overall solution should support the retrieval and processing of these data.”
* Can OSDE describe what formats these data are in?
	+ Files may come from API or flat file imports, but should be flexible enough to handle JSON, XML, XLS, XSLX, PDF, DOC, etc.. The successful bidder will propose an efficient, replicable solution to bring files into the systems.
1. Exhibit 2 – Technical Requirements, High-Level Components Tab CR 3.2. states “Inexpensive storage (e.g. BLOB or bucket storage) to retain all inbound messages in their original formats. This could include XML, JSON, or files.”
* Is the requirement here to provide an inexpensive storage option as part of the solution, or to connect to OSDE’s existing storage location?
* If the requirement is to provide an inexpensive storage option, can OSDE provide an estimate of how much storage is required?
	+ OSDE expects the bidder to propose a solution to meet the needs of an inbound data late as defined in CR 3.2 regardless of current processes.
1. Exhibit 2 – Technical Requirements, High-Level Components Tab, CR 4.1. OSDE Data Store section states “A transactional data store that contains all data received from SIS/SIF’s (e.g. enrollment, attendance, etc.) and other inbound data (assessments, certification, demographics, etc.)…. This data store is also used for tagging records with OSDE-specific information which supports and enables reporting, rollups, and analysis groupings and dimensions. The tagging needs to be flexible to support new reporting and analysis as they emerge (e.g. Covid reporting).”
* Is the requirement to connect to OSDE’s existing data store to perform the tagging? If so, can OSDE provide more details on how this data is stored?
	+ It is not a requirement to connect to the existing OSDE data store to perform tagging.
* Alternately, is the requirement to provide similar functionality in the vendor’s solution? If so, what is the size of the anticipated data store?
	+ OSDE expects the bidder to propose a solution to meet the needs of a transactional database as defined in CR 4.1 regardless of current processes.
1. Exhibit 2 – Technical Requirements, High-Level Components Tab, CR 4.2. Data Warehouse section
* Does OSDE anticipate copying an existing data warehouse into the vendor’s solution for the purposes described in this section? If so, can you provide more details on the size of the data, and the technology being used for this?
	+ Any data currently held in a data warehouse will need to be migrated to the new system based on the successful bidders proposed solution.
1. Exhibit 2 – Technical Requirements, High-Level Components Tab CR 4.5.c MOU/ORR Section
* For datasets needed to satisfy MOUs or ORRs, will OSDE personnel use the vendor’s data management solution (and associated query tools) to produce the required datasets, or is the vendor expected to produce them?
	+ - OSDE will use the bidder’s data management solution (and associated query tools) to produce the required datasets.

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| b. All other terms and conditions remain unchanged. |
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| Supplier Company Name (**PRINT**) |  | Date |
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| Authorized Representative Name (**PRINT**) |  | Title |  | Authorized Representative Signature |