State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Serious drought.
Help Save Water!

To: BILL FIGGE, AICP
Acting Deputy Director
Planning and Modal Programs

Date: March 27, 2015

File: P4000-0419

From: WILLIAM E. LEWIS
Assistant Director
Audits and Investigations

Subject: **AUDIT REPORT OF THE CALIFORNIA HOUSEHOLD TRAVEL SURVEY**

Attached is Audits and Investigations' (A&I) final audit report of the California Household Travel Survey project. The Planning and Modal Programs' response has been included as part of our final report.

Please provide our office with status reports on the implementation of your audit finding dispositions 60-, 180-, and 360-days subsequent to the report date. If all findings have not been corrected within 360 days, please continue to provide status reports every 180 days until the findings are fully resolved. As a matter of public record, this report and the status reports will be posted on A&I's website. If you would like, the audit staff can be available to consult in the early stages of implementation to help ensure that changes address the findings and recommendations in our report. As a matter of public record, this report and the status reports will be posted on A&I's website.

We thank you and your staff for assisting us during this audit. If you have any questions or need additional information, please call Laurine Bohamera, Chief, Internal Audits, at (916) 323-7107, or me at (916) 323-7122.

Attachment

c: Katie Benouar, Chief, Division of Transportation Planning
Coco Briseno, Chief, Division of Research, Innovation & Systems Information
Laurine Bohamera, Chief, Internal Audits, Audits and Investigations

P4000-0419
Audit of the California Household Travel Survey Project
March 2015

William E. Lewis
Assistant Director
Audits and Investigations
California Department of Transportation

REPORT CONTENTS

AUDIT REPORT	Page
Summary	1
Background	1
Objectives, Scope, and Methodology	2
Conclusion	3
View of Responsible Official	4
FINDINGS and RECOMMENDATIONS	
1. Deficiencies in Project Management	5
2. Deficiencies in Contract Management	7
ATTACHMENT 1	
Planning and Modal Programs Response to the Draft Report	

Summary

Audits and Investigations (A&I) completed its audit of the 2010 California Department of Transportation's (Caltrans) California Household Travel Survey (Survey) project. The purpose of the audit was to determine if the Survey project and contract, managed by the Planning and Modal Programs (Program), Office of Travel Forecasting and Analysis (OTFA), were properly administered to achieve the project goals. The audit was requested by the Program to address concerns about the necessity, procurement, and management of the contract.

The audit found that the need to procure the contract was justified, and that the contract was properly procured. We also determined that the Survey project achieved its goals of being completed on schedule and within budget, and that state and local agency partners were generally satisfied with the results.

However, we did note the following issues:

- Deficiencies in Project Management
- Deficiencies in Contract Management

Background

Caltrans conducts the Survey every ten years to obtain detailed information about the socio-economic characteristics and travel behavior of households statewide. Regional travel models, the Statewide Travel Demand Model, and the Statewide Integrated Interregional Transportation Model use Survey information as a base to forecast future travel behavior.

The purpose of the Survey is to update the statewide database of household travel behavior that is used to estimate, model, and forecast travel throughout the State. The 2010 Survey was conducted to provide regional trip activities and inter-regional, long-distance trip information to be used for the statewide model and regional travel models. The data will also be used to develop and calibrate regional travel demand models to forecast the 2015, 2020, 2035 and 2040 Greenhouse Gas emissions (GHG) and to comply with Senate Bill 375 (Steinberg) and Senate Bill 391 (Liu).

SB 375 requires regional planning agencies to develop regional plans using the California Transportation Commission travel demand model guidelines, while SB 391 requires Caltrans to update the California Transportation Plan every five years beginning December 31, 2015.

For the 2010 Survey, Caltrans partnered with two other state agencies, (the California Energy Commission and the California Air Resources Board). Caltrans also partnered with metropolitan planning organizations (MPOs), and regional transportation planning agencies (RTPAs).

Background (continued)

The MPOs and RTPAs were as follows:

- Strategic Growth Council
- Metropolitan Transportation Commission
- Southern California Association of Governments
- Council of Fresno County Governments
- Kern Council of Governments
- Association of Monterey Bay Area Council of Governments
- San Joaquin Valley Air Pollution Control District
- Santa Barbara County Association of Governments
- Tulare County Association of Governments

The goal for partnering with these agencies was to coordinate and combine their travel survey efforts using pooled funds efficiently to benefit all and ensure data consistency. Administrative and steering committees were organized to develop the scope of work and the request for proposals to procure a consultant to perform the development and implementation of the project. OTFA staff represented Caltrans on each committee. The administrative and steering committees also facilitated the project.

Since Caltrans did not have personnel with sufficient expertise and experience with household travel surveys, the Program combined its financial resources with other state and local government agencies creating a partnership for the Survey project. Caltrans procured the services of NuStats LLC to design, test, conduct, and summarize an advanced regional and inter-regional household survey under Agreement 72A0071 for $10,016,444.

Objectives, Scope, and Methodology

A&I conducted the audit of the Survey project to determine if the project and contract were properly managed to achieve the intended goals. The audit objectives were to determine whether the:

- Procurement of consultant services was sufficiently justified.
- Consultant contract was procured properly.
- Project was sufficiently managed and goals were achieved.
- Contract was sufficiently managed.

We conducted the audit in accordance with the International Standards for the Professional Practice of Internal Auditing. Our audit covered the period of June 15, 2010, through June 14, 2013. We began the audit on May 14, 2013, and completed our fieldwork on September 9, 2013. Changes after this date were not tested, and accordingly, our conclusion and opinion do not pertain to changes occurring after September 9, 2013.

Objectives, Scope, and Methodology (continued)

Our methodology consisted of interviewing the OTFA and Division of Procurement and Contracts (DPAC) management and staff, reviewing websites and organizational charts, examining policy and procedure manuals, reviewing project and contract files, testing and reviewing project invoices, surveying project partners, and performing other tests and assessments as we considered necessary to achieve the audit objectives.

Conclusion

Based on our audit, we determined that the Survey project was completed and achieved its objective of compiling statewide travel data that all partners (i.e., state agencies, MPOs, RTPAs) can utilize for their modeling and forecasting needs. Specifically, we found:

- Caltrans had reasonable justification to procure a consultant for the project.
- The contract with NuStats was properly procured in accordance with Caltrans' procurement guidelines.
- The project was adequately managed and project goals were met. Although the original expectation of receiving 60,000 completed household surveys was adjusted down to 42,431 completed surveys during the project, all partners agreed to the reduced number. We surveyed eight partners (six were funding partners) who stated they were satisfied with the results of the project and would be willing to partner with Caltrans for the next Survey.
- OTFA's management of the contract enabled project completion within the time frame and budget specified in the contract.

However, we also noted the following concerns:

- Deficiencies in Project Management
- Deficiencies in Contract Management

We encourage the management of the Program to use A&I as a resource as it endeavors to develop new policies and procedures and/or improve current ones.

Our findings and recommendations are discussed in greater detail in the following section.

View of Responsible Official

In its response to the draft audit report, the Program generally agreed with our findings and recommendations. However, the Program disagreed with Recommendation 5 of Finding 1. We summarized the responses at the end of each finding in the following section. We also provided an analysis of the Program's exception to Recommendation 5 of Finding 1.

Please see Attachment 1 for the Program's complete response to the audit.

WILLIAM E. LEWIS
Assistant Director
Audits and Investigations

January 27, 2015

FINDINGS and RECOMMENDATIONS

Finding 1 Deficiencies in Project Management

Caltrans partnered with other state and local agencies on the California Household Travel Survey (Survey) project with the Division of Transportation Planning, Office of Travel Forecasting and Analysis (OTFA) managing the project. Caltrans' Project Management Handbook requires that a project team understand and apply generally accepted project management techniques. Although the OTFA team ensured completion of the required deliverables within the required timeframe, we noted deficiencies in the management of the project.

Specifically, we found the following:

- In partnering with other state and local entities on the Survey, Caltrans' original survey plans and requirements were not completely fulfilled. The original plan was for 60,000 survey participants; however, the final survey only resulted in 42,431 completed surveys. We also found that the data collected by the Survey for rural areas was insufficient to meet Caltrans' needs. The primary reason for these conditions was that control of the project was, in essence, relinquished to the committees composed of the participating entities.

- Although supplemental data was found to fulfill the rural data requirements, the survey did not contain all the needed data points and did not result in the planned number of survey responses. Documentation was not retained that identified how key project decisions were made. To obtain this information, we relied on interviews with OTFA staff and the partners of this project. We found that the project evolved from its original scope with the committees allowing more data points to be gathered and requiring electronic devices such as geographic positioning systems to be attached to survey participants' vehicles. These and other changes resulted in a more robust survey instrument than was originally planned, and required participants to spend more time and effort to complete the survey. Without sufficient documentation of key decisions, it is difficult to plan more efficient and effective future survey projects.

- Caltrans and its funding partners did not develop the request for proposal (RFP) and the subsequent consultant contract to specify that payment would be based on a total of 60,000 completed household surveys. Rather, the RPF and payment clause in the contract were based on actual cost plus a fixed fee not to exceed $10,016,444, to design, test, conduct, and summarize an advanced regional and inter-regional household survey of up to 60,000 households. In addition, the RFP did not specify a minimum acceptable number of completed

Finding 1 (continued)

surveys. As a result, and coupled with the addition of more data points and electronic devices, the cost of each completed survey was higher than originally projected.

The Caltrans Project Management Handbook, Page 11, requires that project management balances competing demands (scope, time, cost, quality, requirements, and expectations of stakeholders) and helps maintain efficiency by helping ensure that the right resources complete the right tasks at the right time. In addition, a requirement for good project management according to the Project Management Certificate Program of the California State University, Sacramento, is that those involved must understand the challenges in procuring certain products, selecting the best providers and the best contract type for services.

- OTFA staff members did not always conduct their assignments as expected and the office chief did not always take appropriate measures to ensure that assigned duties were carried out and completed as expected. For instance, at the beginning of the project, the person assigned to the project by the office chief did not provide direction to the contractor and committees regarding the sample size and methodology. In addition, the staff member was rarely at the Survey meetings, and did not attend the committee meetings.

  Further, the office chief assigned the contract manager the task of determining if the reduced number of surveys was statistically significant for the purposes of the project. The task was important because the number of completed surveys, 42,431, was substantially lower than the original projected amount of 60,000. The contract manager did not carry out this task, and the office chief did not follow up to ensure that the assignment was completed.

Contributing factors to the deficiencies identified include: a lack of experience by staff handling survey projects; the long time span between surveys; and the size and complexity of the project. The prior Survey was conducted over ten years ago and most of that staff were no longer with OTFA. In addition, there were eleven partners involved in the project, some of whom had conflicting priorities and objectives. According to one staff member of OTFA, the Survey was the largest single statewide and regional household travel survey undertaken in the United States.

Recommendations

We recommend that, for subsequent surveys, OTFA:

1. Evaluate the most practical frequency to conduct the Survey, allowing ample time for planning and development.
2. Ensure it and its partners clearly identify their sample needs in advance of procuring a contract.
3. Continually assess the risks throughout the course of future projects and make adjustments accordingly.
4. Maintain a professional, knowledgeable, skilled, and experienced staff for modeling and conducting surveys.
5. Ensure assignments are clearly understood and completed timely.
6. As a matter of standard operating procedure, retain detailed documentation for the project (i.e., meeting minutes of committees, partners, consultants, decisions made, pros and cons of decisions, etc.) including lessons learned, that can be used in planning for more efficient and effective surveys in the future.

Program Response

The Program has already addressed Recommendation 2 and will implement Recommendations 1, 3, 4, and 6 by June 2015. The Program disagrees with Recommendation 5 and stated that the assignments were understood and the project was completed timely.

Please see Attachment 1 for the Program's full response.

A&I's Analysis of the Program's Response to Recommendation 5

A&I acknowledges that the project was completed timely and within budget. However, Recommendation 5 pertains to a weakness identified in the internal control environment of OTFA's operations. We noted specific tasks during the life of the project that were not monitored to either ensure completion or that appropriate action was taken. As stated in our finding, the responsible manager took responsibility for the incomplete tasks and stated that staff should have been supervised more closely. Without adequate oversight and monitoring, there is no assurance staff are held accountable for their assignments, which could jeopardize the success of future OTFA projects.

Finding 2 Deficiencies in Contract Management

Caltrans paid 32 invoices totaling $9,922,410 to the contractor, NuStats. We sampled five of the invoices, totaling $1,553,783 (16 percent), for compliance with department contract management policies and procedures. We found that the contract manager adequately managed the Survey contract to ensure delivery and completion were on time and on budget. However, we noted deficiencies in the review and approval of invoices for payment.

Finding 2 (continued)

The deficiencies were as follows:

- The contract manager did not use actual cost, as specified in the contract, as the method for calculating payments to the contractor. Rather, the contract manager based payments on the percentage of completion.
- Documentation (e.g., time sheets, payroll registers) supporting labor costs for wages paid by NuStats and its sub-consultants were not included with the invoices nor obtained by the contract manager. NuStats LLC, the prime consultant, and its sub-consultants submitted invoices itemizing labor costs by employee name. However, the employee positions/titles, listed in the cost proposal, were not included in the invoices reviewed. Therefore, we could not determine if labor costs claimed totaling $972,011 were valid and allowable.
- The contract manager approved invoices from NuStats for payment that included higher fringe benefit rates for labor costs than those stated in the agreement's cost proposal.
- Invoices were approved that included costs totaling $289,023 for three sub-consultants not listed in the cost proposal. Additionally, one approved invoice included travel costs totaling $578 for a sub-consultant, although the cost was not included in the cost proposal. Payments for costs not identified in the cost proposal can result in unauthorized purchases and abuse or waste of state funds.

Exhibit B, paragraph 5.A, of the contract states that the contractor (NuStats) will be reimbursed "...for actual costs (including labor costs, employee benefits, travel, overhead, and other direct costs) incurred by the Contractor in performance of the work... Actual costs shall not exceed the estimated wage rates and other estimated costs set forth in the Contractor's cost proposal without prior written Agreement between the State and the Contractor."

Chapter 4 of Caltrans' Contract Managers Handbook requires contract managers to:

- Monitor contractors' progress for compliance with all contract provisions.
- Ensure payments to contractors are consistent with provisions in Exhibit B of contracts and with the services stipulated.
- Review and approve invoices to substantiate expenditures to work performed.
- Check for the accuracy, timeliness, and compliance of invoices to the cost and payment terms of contracts, limiting rates to those annotated in the contract or cost proposal.

Finding 2 (continued)

- Ensure personnel shown on invoices match those listed in the cost proposal and/or contract.
- Monitor contractors' use of subcontractors and supplies.
- Review invoices for all required information, including any supporting documentation necessary.
- Conduct technical reviews of invoices, as necessary, to determine the reasonableness of changes and hours worked.
- Maintain copies of all invoices including backup documentation.
- Maintain documentation of all activity.

One reason for the identified deficiencies was the contract manager's lack of experience in managing contracts of this size and complexity. The contract manager had completed Caltrans contract manager training course and managed another contract; however, that contract was less complex.

Recommendations

We recommend OTFA ensure its contract managers:

1. Fulfill their responsibilities as prescribed in Chapter 4 of Caltrans' "Contract Managers Handbook."
2. Use the proper basis for managing the contract consistent with the stipulated method of payment.
3. Review and approve contract invoices in accordance with the contract provisions.

Program Response

The Program was responsive to the audit finding and plans to address the recommendations.

Please see Attachment 1 for the Program's full response.

Audit Team

Laurine Bohamera, Chief, Internal Audits
Douglas Gibson, Audit Manager
Emilio Flores, Auditor in Charge
Evajuani Bynum, Auditor

ATTACHMENT 1

Planning and Modal Programs Response to the Draft Report

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Serious drought!
Help save water!

To: WILLIAM E. LEWIS
Assistant Director
Audits and Investigation

Date: February 26, 2015

From: BILL FIGGE, AICP
Acting Deputy Director
Planning and Modal Programs

Subject: **AUDIT REPORT – CALIFORNIA HOUSEHOLD TRAVEL SURVEY**

As requested in our previous meeting, attached is the Division of Transportation Planning's response to the Audits and Investigation report on the California Household Travel Survey, dated January 2015, and our proposed work plan to address the report findings is included.

Thank you for your thorough investigation of the circumstances of the contract and your thoughtful recommendations. We appreciate your offer of future assistance as we develop these complex data projects.

If you have any questions, please contact me at (916) 654-5368 or Katie Benouar, Chief of the Division of Transportation Planning, at (916) 653-1818.

Attachment

c: Katie Benouar, Chief, Division of Transportation Planning
Coco Briseno, Chief, Division of Research, Innovations & System Information
Laurine Bohamera, Chief, Internal Audits, Audits and Investigations

ATTACHMENT

CALIFORNIA HOUSEHOLD TRAVEL SURVEY AUDIT REPORT
Response and Proposed Actions

FINDINGS AND RESPONSE

The project team concurs with the findings of the Audits and Investigations draft audit report on the California Household Travel Survey (CHTS) contract dated January 2015. We have the following observations:

Finding 1

Third bullet, first paragraph, page 5

The report states, "Caltrans and its funding partners did not develop the request for proposal (RFP) and the subsequent consultant contract to specify that payment would be based on a total of 60,000 completed household surveys."

Response: Caltrans and the Southern California Association of Governments (SCAG) actually did develop an RFP. However, we do agree it was not specified that payment would be based on completed household surveys. Rather, the RFP and payment clause in the contract were based on actual cost plus a fixed free not to exceed $10,016, 44 to design, test, conduct, and summarize an advanced regional and inter-regional household survey of up to 60,000 households. These discrepancies between scope of work and technical proposal, however, could have been discovered during the review of the RFP and the subsequent consultant contract by both DPAC and the Legal Division, and brought to the attention of the project management. Unfortunately, it was missed. It is a lesson learned for future survey contracts.

Fourth bullet, second paragraph, page 6

The report states, "The office chief assigned the contract manager the task of determining if the reduced number of surveys was statistically significant."

Response: UC Irvine was tasked to calculate the minimum acceptable number of samples. UC Irvine determined that approximately 24,000 samples (statewide) would be more than adequate.

GENERAL OBSERVATIONS

The following events appear to have significant impacts on the CHTS project management and outcome.

1. The initial Project Manager (Pete Spaulding) was promoted and assigned to another project.

2. About the same time, the contractor (NuStats) was sold to a German-based firm. The new company ownership replaced the original management team with all new employees.

PROPOSED ACTIONS

DOTP commits to the following actions for inclusion in the final report:

- Explore new methodologies (use of mobile surveys and big data) for conducting future statewide household travel surveys.
- DOTP could ask DRISI to send out a short survey to our research list serve asking states the frequency of their statewide surveys.
- Increase the survey project's frequency (more often than every ten years) to provide continuity and allow ample time for planning and development of future survey experts (project and contract managers).
- Assure that future contract managers review and approve contractor invoices based on individual employee timesheets, in addition to other supporting documents.
- Utilize Audits and Investigations Office, as a resource, to review and pre-audit upcoming/future RFPs, especially in regards to large and complex survey projects.
- Ensure all have contract management training.

Response to Draft Report

Audit Name: California Household Travel Survey **Audit No.: P4000-0419**

Auditee: Planning and Modal Programs

Audit Report Finding 1
Deficiencies in Project Management

	A&I Audit Recommendation	Auditee Response to Draft Report	Estimated Completion Date	Staff Responsible
1	Evaluate the most practical frequency to conduct the Survey, allowing ample time for planning and development.	Since the completion of CHTS, the Data Branch staff, under the supervision of the Multi Modal System Planning office chief, have been discussing and evaluating the most practical frequency to conduct these complex surveys. Based on the lessons learned from the most recent CHTS project and transportation trends, it has been determined that the frequency should not be less than five years. This estimate, is also based on funding availability as such surveys are expensive to conduct. It needs noting that data collection technology and markets are changing and we need to reasses traditional survey methods in light of emerging, new generation of data collection methods for the next cycle of CHTS.	15-Jun	Office Chief or a Branch Chief
2	Ensure it [OTFA] and its partners clearly identify their sample needs in advance of procuring a contract.	For future surveys, we will insure that both our Office and our partners (if any) do identify their sample size prior to procuring a contract. We will insure that sample calculation will take place upstream of survey contract procurement.	Already done (almost two years ago). The project team came up with this conclusion immediately after the completion of last CHTS project.	N.A.
3	Continually assess the risks throughout the course of future projects and make adjustments accordingly.	Staff assigned to future projects will be instructed to perform risk assessment for all upcoming projects.	Jun-15	Office Chief or a Branch Chief
4	Maintain a professional, knowledgeable, skilled, and experienced staff for modeling and conducting surveys.	Staff assigned to future projects will be given the professional training required and the upward mobility opportunities to develop and posses the knowledge and skills required to conduct future surveys and transportation modeling.	Jun-15	Office Chief or a Branch Chief
5	Ensure assignments are clearly understood and completed timely.	Do not agree with the report findings. The assignments were understood and the project completion was timely. Perhaps, the report should state: the technical proposal and the scope of work should be aligned, since that seems to be the biggest issue for this project.	N.A.	N.A.
6	As a matter of standard operating procedure, retain detailed documentation for the project (i.e., meeting minutes of committees, partners, consultants, decisions made, pros and cons of decisions, etc.) including lessons learned, that can be used in planning for more efficient and effective surveys in the future.	Staff assigned to future projects will be instructed and reminded to do a better job of retaining documentation and minutes of many decisions made by the many committees/partners involved. Management will also insure that critical staff assigned to future complex projects (such as CHTS) are not moved to other assignments at midpoint (critical path) of such projects.	Jun-15	Office Chief or a Branch Chief

Response to Draft Report

Audit Name: California Household Travel Survey **Audit No.: P4000-0419**

Auditee: Planning and Modal Programs

Audit Report Finding 1
Deficiencies in Project Management

A&I Audit Recommendation	Auditee Response to Draft Report	Estimated Completion Date	Staff Responsible

Audit Report Finding 2
Contract Management Deficiencies

	A&I Audit Recommendation	Auditee Response to Draft Report	Estimated Completion Date	Staff Responsible
1	Fulfill responsibilities as prescribed in Chapter 4 of Caltrans' "Contract Managers Handbook."	The management will make sure that the contract manager reviews the handbook and is aware of all the rules and responsibilities of the contract manager. Also, the staff responsible takes the online contract management training and certificate.	Jun-15	Will determine when the new contract is planned.
2	Use the proper basis for managing the contract consistent with the stipulated method of payment.	Contract manager will make sure that all the rates of payments are based on the cost proposal submitted by the contractor.	As soon as the contract starts	Will determine when the new contract is executed.
3	Review and approve contract invoices in accordance with the contract provisions.	Contract manager will review the contract provisions before approving the invoice and make sure that all the supporting documents for cost are provided by the contractor.	As soon as invoices are submitted	Will determine when the new contract is executed.