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STAFF REPORT

Approved and Forwarded to City Council:

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Bryan H. Montgomery, City Manager

Date: Tuesday, July 14, 2015

To: Bryan H. Montgomery, City Manager

From: Kevin Rohani, Public Works Director/City Engineer

Subject: Agreement with TJKM Transportation Consultants for Engineering
               Services Associated with the City of Oakley Traffic Modeling Project

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Background and Analysis

The City of Oakley is a growing and vibrant community, and as with all growing communities it is important to apply proper planning and management for the growth of the community to enhance the quality of life for the residents.

Traffic Engineering is a key component of private development projects in the City of Oakley. Having a key Traffic Engineering component helps ensure that all projects (Residential, Commercial, and Industrial) are processed and approved in compliance with the City's General Plan, ordinances, and laws. Understanding the demands placed on the community's transportation network by these developments is an important dimension of assessing the overall impacts of development. Staff presented a detailed report at the March 10, 2015 City Council meeting regarding Traffic Engineering and Development projects. This report outlined the development project processing and traffic impacts related to development projects.

As part of the FY 2015/16 budget process, funding has been allocated to develop and maintain a functional traffic model for the City of Oakley. This is the first time that such a project has been undertaken in the City of Oakley since incorporation in 1999. Staff has worked with TJKM Transportation Consultants on creating the scope of work and details of the new traffic model with the attached proposal. TJKM is the premiere traffic consultant in the bay area and currently works on similar projects for a number of municipalities.

The preparation of the City of Oakley traffic model will involve taking new traffic counts on all major roadways and intersections in the community; reviewing the data and developing an operational level of service analysis for the transportation network in the community.

This traffic model will be used as the foundation for evaluating traffic impacts for future development projects in the City of Oakley, and will show the cumulative traffic impacts to the City's transportation network in real time. Engineering and Planning staff will work with TJKM on the creation of the traffic model, and once developed, staff will keep the traffic model updated in real-time as future private development projects are processed. The cost for updating the traffic model will be paid by private developers.

Fiscal Impact
Approval of the resolution will authorize the City Manager to execute an agreement with TJKM Transportation Consultants for a cost not to exceed $49,515. The 2015/16 Budget includes funding for this project from the Traffic Impact Fee.

Staff Recommendation
Staff recommends that the City Council adopt the resolution approving the Proposal with TJKM Transportation Consultants for engineering services associated with the City of Oakley Traffic Model and authorizing the City Manager to enter into an agreement.

Attachments
1) TJKM Proposal
2) Resolution

TJKM

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June 5, 2015

Mr. Kevin Rohani, P.E.
Public Works Director/City Engineer
City of Oakley
3231 Main Street
Oakley, CA 94561

Re: Proposal to Develop Oakley Citywide Traffic Model

Dear Mr. Rohani:

Background

TJKM Transportation is pleased to submit this proposal to prepare a Citywide Traffic Model for the City of Oakley. An Oakley traffic model would assist the City in monitoring near- and mid-term of levels of service at key intersections in the City. Such a model would be useful in reviewing conditions that currently exist as well as the levels of service that would result from approved but not yet built projects. With such a model, a traffic study could ascertain levels of service under existing, existing plus approved, and existing plus approved projects plus the project(s) currently being evaluated. The existing Contra Costa Transportation Authority (CCTA) traffic forecast model could be used to determine ultimate, or buildout, conditions throughout the City, but not near- or mid-term conditions.

Recommended Approach

For these short-term conditions, TJKM recommends the use of a Vistro model, which is the updated version of the Traffix model, the widely used traffic engineering software. TJKM has downloaded information on the Vistro model from the company's website and included it in Appendix A. TJKM is not affiliated with Vistro, or the distributor of the software, the PTV Group; this information is included to provide background material.

The initial process is to determine the key study intersections in Oakley; TJKM's review of the City map indicates that there are about 25 key intersections in the community involving arterials, collectors and freeway interchanges. New peak hour counts would be obtained at these locations and the model would be established so that as development is proposed anywhere in the City, the traffic changes at all of the key intersections would be determined. The traffic from new development and previously approved projects is overlaid on the existing volumes to determine the cumulative impact of approved projects upon existing traffic conditions.

Periodically, perhaps at one or two-year intervals, new counts would be made and the projects that have progressed from the approval stage to being fully functional would be removed from the model as their traffic volumes are now measured in recent intersection counts. TJKM feels the use of this type of model would be very useful to Oakley in monitoring on-going traffic conditions while the City is growing.

TJKM Proposed Scope of Work

Task 1 – Select and Count Study Intersections TJKM will attend one kick-off meeting before the start of the project. TJKM will work with the City to determine the most logical (approximately 25) study intersections. Candidate intersections are those that currently are, or in the future will be, subjected to increased traffic from new development. This could include intersections that currently are not too congested, but are located in a portion of the City that is likely to experience traffic growth. We can use CCTA model results to help in this selection process, if

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necessary. At the selected study intersections, TJKM would obtain (from subcontractors) existing a.m. and p.m. peak hour traffic counts. Normally, the counts are conducted between 7 and 9 a.m. and 4 to 6 p.m. The busiest four consecutive 15-minute intervals are depicted as "the peak hour." Thus, the peak hour is not the same time at all study intersections. At each intersection vehicles, pedestrians and bicyclists will be counted; at a few key intersections separate counts of trucks would also be obtained.

Task 2 – Calculate Intersection Levels of Service Using the Vistro software, the existing intersection level of service would be determined. The primary factors in calculating levels of service include the existing traffic vehicular counts and the approach lanes, signal phasing and signal timing at the intersection. Traffic signal timing plans would need to be supplied to TJKM. Other factors such as truck counts and unusual conditions would also be included. The level of service serves as a very important factor in monitoring and evaluating conditions at each of the study intersections.

Task 3 – Establish Traffic Distribution Patterns; Create Vistro Model TJKM will subdivide the areas within the City into traffic zones. TJKM will program the Vistro model so that as development occurs in any zone in the City, the routes that traffic will follow as it flows to and from that zone are depicted. This information determines how each intersection in the City is affected by development in any part of the City. Since portions of Oakley are affected by development in neighboring Brentwood, TJKM will establish zones and routes that account for Brentwood development.

TJKM will populate the new Vistro model with land development proposals that have been approved by the City but are not fully or partially contributing traffic as of the date of the most traffic counts. TJKM will rely on the City to supply such information. TJKM will utilize available traffic studies to aid in this process. New development from appropriate portions of Brentwood will also be included. After this process is completed, the new Vistro model will calculate the "existing plus approved projects" levels of service.

Task 4 – Maintaining the Oakley model When the model is completed, TJKM recommends that the City establish procedures to ensure it is maintained and all relevant projects are included. TJKM can work with the staff to develop such procedures, which would provide details on how each future development proposal is included in the Oakley model. TJKM can serve as the "keeper of the model" if desired. In such an arrangement, when a new development application is received, TJKM can enter the information into the model. If the City requires a traffic study, TJKM can provide the intersection information to the traffic firm conducting the study. TJKM would provide existing, existing plus approved, and existing plus approved plus project peak hour traffic volumes for each of the impacted study intersections. Either the City or TJKM can select the appropriate study intersections. Updated levels of service will be calculated for each study intersection by the preparer of the traffic study.

TJKM will also prepare a report that will summarize the findings. After a project has been approved by the City, it will be entered into the traffic model. For this proposal, TJKM has included sufficient budget to develop and formalize procedures for appropriate on-going use of the model.

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Fee and Schedule

The table below summarizes our estimates hours and costs for this project. The total proposed fee is $49,515. We expect to be able to complete the first three tasks of the project within about four months. We recommend that the traffic counts for this project be conducted while school is in progress. The Oakley Unified Elementary School District website indicates that school begins on July 27, 2015; the fall break occurs from September 28 through October 9. With this schedule, obtaining traffic counts could be scheduled during August or early September

Tasks	Principal $250/ Hr.	Trans. Engr. $155/ Hr.	Asst. Trans. Engr. $125/ Hr.	Counts	Total	
					Hours	Cost
Task 1						
Identify and Conduct Counts for Study Intersections	12	8	4	$10,000	24	$14,740
Task 2						
Calculate Intersection Level of Service (LOS) and Delay	2	8	50	0	60	$7,990
Task 3						
Create VISTRO Model	6	40	80	0	126	$17,700
Task 4						
Report	2	11	6	0	19	$2,985
Maintain Model	11	20	2	0	33	$6,100
TOTAL	33	87	142	$10,000	262	$49,515

We appreciate the opportunity to provide these services to the City of Oakley. Please contact me if there are questions on this matter.

Very truly yours,

Chris D. Kinzel, P.E.
Vice President

Attachment: Information about Vistro Model from PTV Website

Appendix A

PTV Vistro - the traffic engineering tool

How do you conduct traffic studies, evaluate new development impacts, and time your signals all at once? PTV Vistro is the all-in-one solution for all of your traffic analysis needs. With PTV Vistro, you can analyse traffic operations, evaluate new development impacts, and optimise signal timing. It can be used to analyse an intersection, a corridor, or an entire network.

PTV Vistro was developed specifically for traffic analysis and assists transportation planners and traffic engineers with their projects. It provides quick and easy network setup, efficient data entry, and automated report generation, saving time and money.

Bing maps, drag & drop graphics, and intersection templates facilitate efficient network construction. In addition, a workflow panel guides users efficiently through the various stages of the project and provides signal timing optimization at the push of a button. The integrated scenario management allows the user to evaluate and compare alternatives all within a single project.

PTV Vistro offers a selection of industry-standard analysis methodologies, such as the Highway Capacity Manual (HCM) 2010 and HCM 2000. PTV Vistro displays results for volume-to-capacity, level of service (LOS) and delays instantaneously – as both a table and graphically in the network window. User-friendly reporting functions make generating report-ready tables and figures quick and easy.

The software is also attractive as an additional tool for users of PTV Visum and PTV Vissim: the integration into the Vision Traffic Suite allows the importing of PTV Visum models into PTV Vistro and exporting of PTV Vistro models out to PTV Visum or PTV Vissim, providing the connection between the strategic planning level and the detailed operations level. Users can combine their software tools as needed in a modular fashion, depending on the task at hand.

Benefits of Vistro

A tool especially for traffic analysis

Opt for PTV Vistro for a tool that focuses on the operational side of transportation planning. PTV Vistro offers both functionalities for conducting traffic impact analyses (TIAs) and signal timing studies. Automated, easy-to-use reporting in tabular and graphic form completes the tool and displays the results so they are easy to understand. This way, the effect of the measures examined can be analysed quickly.

User friendliness & efficiency

Build your traffic model in PTV Vistro quickly. Bing map aerial photography, drag & drop, "snap-to-handles", intersection templates and simple tabular data input make modelling easier. In addition, the software allows the import of existing networks from the traffic planning software PTV Visum and other planning tools and export to PTV Vissim for detailed simulation analysis when needed.

Integration and flexibility

Select software that perfectly complements your work with the planning tools PTV Visum and PTV Vissim. Traffic networks generated in PTV Vistro can be exported seamlessly to and from PTV Visum and, using the ANM interface, to PTV Vissim. In PTV Visum there are processes and tools available for all strategic traffic planning questions. PTV Vissim provides detailed simulation analysis when needed, such as evaluating near or over-saturated traffic conditions, comparing various alternatives, or analysing detailed signal timing.

Scientifically state-of-the art

Take advantage of a software solution which meets the highest modern standards. Our close cooperation with the scientific and research community allows us to consistently set new standards in the field of software-based traffic and transport planning. In this way, you benefit from high-performance algorithms, state-of-the-art methods and software technology which is continually enhanced and tested.

Strong service

Become a member of our large international user community. Benefit from our skilled and dedicated support team, our professional services, detailed documentation and tutorials, extensive training programmes and user group meetings ensuring a high level of knowledge exchange.

Source: PTV Group Website

RESOLUTION NO.___-15

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF OAKLEY APPROVING A PROPOSAL WITH TJKM TRANSPORTATION CONSULTANTS FOR ENGINEERING SERVICES ASSOCIATED WITH THE CITY OF OAKLEY TRAFFIC MODEL AND AUTHORIZING THE CITY MANAGER TO ENTER INTO AND EXECUTE THE AGREEMENT

WHEREAS, as part of the Fiscal Year 2015/2016 Budget, the City of Oakley approved the Public Works operation budget; and

WHEREAS, in the Public Works operation budget, funds have been allocated from the Traffic Mitigation Fund for creation of a Traffic Model for the City of Oakley; and

WHEREAS, TJKM Transportation Consultants, is the premiere traffic engineering firm in the bay area with expertise in municipal traffic and transportation design and development for municipalities; and

WHEREAS, TJKM Transportation Consultants, has submitted a proposal to provide traffic design services for City of Oakley Traffic Model for an amount not to exceed $49,515; and

NOW, THEREFORE, BE IT RESOLVED AND ORDERED, that the City Council of the City of Oakley hereby approves the Proposal with TJKM Transportation Consultants for the development and preparation of the City of Oakley Traffic Model for an amount not to exceed $49,515, in the form attached hereto as Exhibit A, and authorizes the City Manager to enter into and execute the agreement.

PASSED AND ADOPTED by the City Council of the City of Oakley at a meeting held on the 14th of July, 2015 by the following vote:

AYES:
NOES:
ABSENT:
ABSTENTIONS:

APPROVED:

_____
Doug Hardcastle, Mayor

ATTEST:

_____   _____
Libby Vreonis, City Clerk   Date