Meeting Date: 10 / 14 / 08

ACTION	TYPE OF ITEM
☐ Approved Recommendation	☐ Info/Consent
☐ Ord. No(s). _____	■ Report
☐ Res. No(s). _____	☐ Public Hearing (Info/consent)
☐ Other _____	☐ Other _____

Prepared By: Jason M. Samonte Agenda Item No. O-2

Reviewed By: City Manager City Attorney Finance Public Works

DATE: October 6, 2008

TO: City Council

FROM: Ken Ortega, Public Works Director
Public Works Department

SUBJECT: **Adoption of the Intelligent Transportation System (ITS) Master Plan**

RECOMMENDATION

That City Council:

1. Approve and adopt the ITS Master Plan to manage and improve traffic.

2. Approve the special budget appropriation of funds in the amount of $340,000 from Circulation System Improvement Fees Fund Balance to the ITS Constr TMC & Sec 1 & 2 Project to construct the Traffic Management Center (TMC) and approve the special budget appropriation of funds in the amount of $1,164,800 from Circulation System Improvement Fees Fund Balance to the ITS Constr TMC & Sec 1 & 2 Project for the design and integration costs of Section 1 and 2 of the ITS Master Plan.

SUMMARY

The ITS Master Plan is intended to help maximize the efficiency of our existing streets and improve public safety and response. The Oxnard ITS will provide the ability to collect and process real-time traffic information, disseminate this traffic information to the public agency stakeholders, and receive traffic information from other agency stakeholders.

The key to any ITS is communication of information. The objective is the communication between all traffic signals to a centralized control location where green time, the amount of time the light is green for a given direction, can be efficiently managed, then communicating existing traffic conditions to drivers. Engineering involves processing incoming information, determining the best allocation of green time and providing drivers useful information .

The benefit of an ITS is the ability to respond in real time to changing traffic patterns. Signals are controlled by changing signal timing from a central control location; the effects of these changes are immediate. With the use of closed circuit television (CCTV) cameras, operators are able to provide manual intervention and, if required, dispatch equipment and personnel to repair equipment failures or assist in incident removal in a coordinated method. The images can also be shared with other departments (e.g., fire department, police department, public works, etc.) and the potential exists for integration with partner agencies (e.g. City of Port Hueneme, County, Caltrans, etc.) as well.

In the future as part of Phase II, the City also hopes to utilize Advanced Traveler Information Systems (ATIS) to disseminate transportation-related information to the traveling public. The method of dissemination can range across several different media including both agency-owned devices (e.g., Dynamic Message Signs (DMS), agency web page, etc.) as well as privately operated services (e.g., radio reports, private web sites, news media, etc.) The information is typically distributed in one of two ways: pre-trip information or en-route information. Pre-trip traveler information is meant to alert commuters to traffic conditions prior to beginning their trip, either locally or regionally. This is usually done through the use of local news and public access cable TV media outlets, kiosks, or the Internet. Once the traveler has begun his or her journey, information received en-route can be given through any number of devices including several different roadside elements (e.g., DMS, telephone services such as 511, etc.) as well as through in-vehicle media services (e.g., radio, navigation systems).

In accordance with the California Environmental Quality Act Guidelines Section 15303, projects involving new construction of small facilities and equipment such as those included in the ITS are exempt from the requirements of CEQA. Therefore, staff has determined that there is no substantial evidence that the project may have a significant effect on the environment.

DISCUSSION

Background

In 2005, Traffic Engineering staff began the process of upgrading the City's traffic signal system. In 2006, Iteris was selected to complete the Oxnard ITS Master Plan. After a series of stakeholder meetings and an inventory of the existing system, a draft master plan was completed. After several reviews and edits, the final master plan was completed in spring of 2008.

The ITS Master Plan achieves all of the following goals:

- Details a long-term ITS deployment strategy
- Inventories the existing transportation infrastructure to maximize the use of existing resources when deploying future ITS deployments to maximize funding
- Improves public safety and incident response time
- Provides the City with the tools to more efficiently and effectively manage the existing transportation network
- Provides operations and maintenance cost estimates
- Develops detailed deployment cost estimates for the phased deployment of ITS strategies
- Employs Systems Engineering Best Practices and the *Systems Engineering Guidebook for ITS*

- Provides an evaluation of the City's existing QuicNet/4 traffic signal control system and assesses the suitability of this system based on functional requirements and user needs
- Develops a Concept of Operations to ensure the ITS Master Plan meets the City's current and future transportation management needs
- Addresses systems integration to support multi-jurisdictional coordination with additional City and regional stakeholders including Oxnard Police, Ventura County, neighboring cities, as well as other stakeholders including heavy rail, transit rail (Metrolink) and bus transit
- Complies with and becomes part of the adopted Southern California Associations of Governments (SCAG) Regional ITS Architecture
- Addresses the need for traveler information to the end user, the general public

Phase I

The ITS Master Plan spells out how best to implement, operate and maintain an ITS. The ITS will provide for real-time traffic information allowing for quick reaction time to changing traffic patterns and/or roadway incidents. This is done by deploying traffic cameras, interconnection of all electronic traffic controls and by keeping drivers informed of traffic conditions. Through this set up, green time can be managed more efficiently thereby reducing congestion and pollution caused by idling vehicles delayed in traffic. In support of the City's overall vision of a multi-jurisdictional transportation management system for the ITS, a communication link is proposed between the TMC, the Oxnard Police Department, the County of Ventura, and Caltrans.

Traffic Management Center ($340,000): The City will need to construct a Traffic Management Center (TMC). The TMC will house the equipment needed to run the ITS system as well as the control room. The control room is the area where the TMC operator(s) carries out traffic monitoring tasks and other day-to-day activities. Within the TMC control room, there are a number of physical items which need to function together in order to form the basis of the TMC. The control room will contain a video wall display system that will be the operational focal point of the TMC because it provides visual information for traffic management purposes and is visible to all operations staff. The new TMC is located in the vicinity of the Oxnard Emergency Operations Center (EOC). The City goal is to have TMC operations capabilities from the EOC in the future.

Including the Hub at the TMC, there are six Ethernet communication hubs proposed. Further, the system is comprised of two fiber optic loops, one for the west side and one for the east side of the City. These fiber optic loops and communication hubs comprise the Backbone Communication System for the City's ITS. This System assumes Ethernet based communications between the signalized intersections, the City and regional facilities.

Geographic Sections ($10.80M): The ITS Master Plan includes 6 geographic sections. It is important to note that the City does have flexibility in the order in which the sections are deployed. Section 1 and Section 2 must be completed in sequence. However, with the completion of these two sections, the City does have some flexibility in the order of deployment of Sections 3, 4, and 5. However, Section 6 does require the completion of Sections 1 and 3. There are 179 ITS Master Plan intersections. The 2008 General Plan Option B recognizes 25 as below LOS C, the ITS Master Plan will improve 11.

PROJECT COST ESTIMATE SUMMARY

Total project costs for each section and for the TMC are listed below. For more detailed cost information, please refer to Attachment No. 3.

Description	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Total
Construction	1,832,500	1,657,800	2,038,100	1,005,900	3,881,000	1,075,600	11,490,900
Construction in Progress	(147,318)	(0)	(207,925)	(76,437)	(201,312)	(54,325)	**(687,317)**
Total Construction	**1,685,182**	**1,657,800**	**1,830,175**	**929,463**	**3,679,688**	**1,021,275**	**10,803,583**
TMC							**340,000**
Grand Total							**11,143,583**

Phase II

Phase II has identified long-term projects that are planned for five years or more into the future. One such project is to utilize the Advanced Traveler Information Systems (ATIS) to disseminate transportation-related information to the traveling public. Technology advancements may change how these projects will be deployed in the future and what the estimated costs would be. Due to these factors, staff is not able to estimate the costs of Phase II at this time.

FINANCING PLAN FOR THE TMC, ITS COMMUNICATIONS BACKBONE AND DESIGN OF SECTIONS 1 AND 2 ($1,504,800)

Short Term Funding:

The estimated construction cost of Phase I, which includes all sections of the ITS Master Plan and the TMC, is $11,143,583. The financing plan for the construction of the TMC, ITS Communications Backbone and design of Sections 1 and 2, has a total cost of $1,504,800.

Circulation System Improvement Fees Fund (Fund 354):
The 2020 General Plan forecasts the number of additional trips that will be generated in the future and a street network system necessary to support those additional trips. The Traffic Impact Fee takes the total cost to construct the street network necessary to support the 2020 General Plan and divides that cost among the new trips that will be generated. Staff recommends appropriating $1,504,800 from undesignated fund balance from the Circulation System Improvement Fees Fund (Fund 354) to the ITS ITS Constr TMC & Sec 1 & 2 Project (Project #093108).

Proposition 1B Local Street Improvement Funds:
Proposition 1B funds are to be used for improvements to transportation facilities that will assist in reducing local traffic congestion and further deterioration, improving traffic flows, or increasing traffic safety. This includes the road pavement maintenance, rehabilitation, installation, construction and reconstruction of necessary associated facilities such as drainage and traffic control devices, or the maintenance, rehabilitation, installation, construction and reconstruction of facilities that expand use of public transportation systems and safety projects to reduce fatalities. Staff is recommending that $2,178,182 of the City of Oxnard's portion of the Proposition 1B funds be designated for the ITS

Constr TMC & Sec 1 & 2 Project (Project #093108). Staff will return to City Council to appropriate the money with the FY 2009-11 budget. Construction will not start on this project until FY 2009-10, which is when we will receive the Proposition 1B money.

Long Term Funding:
Staff recommends that construction for subsequent sections may be funded by federal, state or local grants as they come available. Staff has identified that the following grants may be eligible for this project: Congestion Mitigation and Air Quality (CMAQ), Surface Transportation Program (STP), Homeland Security Improvements, Highway Safety Improvements and Air Pollution Control District (APCD).

As funds become available, future Traffic Impact fees (Fund 354) may be recommended for this project.

FINANCIAL IMPACT

Funds are available in the Circulation System Improvement Fees fund balance to fund the estimated $1,504,800 cost to construct the TMC and design sections 1 and 2 of the ITS Master Plan. It is anticipated that funds will be requested as part of the fiscal years 2009 – 2010 budget for construction of sections 1 & 2 from Prop 1B funds.

JMS:joh

Attachment #1 – ITS Master Plan
Attachment #2 – Special Budget Appropriation
Attachment #3 – Project Costs

Note: The ITS Master Plan has been provided to the City Council. Copies are available for review at the Circulation Desk in the Library after 6:00 p.m. on the Thursday prior to the Council meeting and at the City Clerk's Office after 8:00 a.m. on Friday.

CITY OF OXNARD

REQUEST FOR SPECIAL BUDGET APPROPRIATION

To the City Manager: October 14, 2008

Request is hereby made for an appropriation of total . . . . . $ 1,504,800

Reason for appropriation: To fund construction of the Traffic Management Center (TMC) and the design and integration of Section 1 and 2 of the ITS Master Plan.

FUND	DESCRIPTION/ACCOUNT	AMOUNT
Circulation Sys. Impr. Fees (354)	**ITS Constru TMC & Sec 1 & 2**	
	354-3410 (093108)	
	826-8208 - Services - Construction	340,000
	826-8208 - Services - Other Prof/Contract	1,164,800
	Net Estimated Change to Circulation Sys. Impr. Fees Fund Balance	**(1,504,800)**

Manager

REQUIRES CITY COUNCIL APPROVAL

CHIEF FINANCIAL OFFICER

James Cameron

Disposition

Approved _____

Rejected _____

Transfer by Journal Voucher _____

City Manager

Attachment No. 2

Project Costs

Description	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Total
Communication Hub	40,000	40,000	40,000	40,000	40,000	0	**200,000**
Camera System	50,000	90,000	30,000	20,000	50,000	20,000	**260,000**
Conduit	412,000	256,400	546,400	230,300	1,354,900	240,800	**3,040,800**
Fiber Optic Cable	233,700	279,000	251,100	92,600	269,200	97,900	**1,223,600**
Equipment Costs	98,000	118,000	70,000	74,000	66,000	102,000	**528,000**
Controller Upgrade	112,800	82,000	85,800	37,500	73,300	47,200	**438,600**
Design & Integration	619,500	545,300	664,600	328,800	1,268,700	352,300	**3,779,200**
Contingency/CPI	266,500	247,100	350,200	182,700	758,900	215,400	**2,020,800**
Subtotal Construction	**1,832,500**	**1,657,800**	**2,038,100**	**1,005,900**	**3,881,000**	**1,075,600**	**11,490,900**
Construction in Progress	(147,318)	(0)	(207,925)	(76,437)	(201,312)	(54,325)	**(687,317)**
Total Construction	**1,685,182**	**1,657,800**	**1,830,175**	**929,463**	**3,679,688**	**1,021,275**	**10,803,583**
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