

#### **APPENDIX I – PUBLIC SAFETY GRANT APPLICATION**

#### BD-22-1068-1068C-1068L-68403

#### Please complete each section of this Application

1. PROJECT INFORMATION

#### a) NAME OF MUNICIPALITY/GOVERNMENT ENTITY/DISTRICT AND VENDOR CODE

City of Malden

**VENDOR CODE:** VC 6000192110

#### b) PROJECT NAME (LIMIT 10 WORDS)

Traffic Signal Upgrades Along the Broadway Corridor

#### c) BRIEF PROJECT DESCRIPTION (LIMIT 50 WORDS)

The City of Malden requests \$200,000 to replace existing traffic control cabinets, install new signal posts, conduits, detection cameras, and audible push button units at four existing signalized intersections along the Broadway corridor.

d) CONTACT PERSON(S)/TITLE (Persons with responsibility for this grant)

John Alessi, Transportation Planner, Office of Strategic Planning and Community Development, City of Malden

#### e) PHONE # AND EMAIL ADDRESS OF CONTACT PERSON(S)

jalessi@cityofmalden.org 781-324-5720 x 5740

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#### f) MAILING ADDRESS OF CONTACT PERSON(S)

Office of Strategic Planning & Community Development Malden City Hall 215 Pleasant St., Third Floor Malden, MA 02148

#### 2. IMPACT DESCRIPTION/CONNECTION TO GAMING FACILITY

#### a) Please describe in detail the impact that is attributed to the operation of a gaming facility.

The City of Malden continues to witness an increase in vehicular traffic contributed in part by Encore Casino's visitors, workers, and vendors travelling through the City. Individuals also travel into the outlying downtown area to access the Malden Center MBTA Station, which has served as a 'transportation hub' for the casino since it opened operations in June 2019. One of the City's major throughfares that connects from the City Line in Melrose to the City Line in Everett, the Broadway corridor, has experienced increased traffic congestion contributed in part by Encore Casino's operations.

Malden's roadway system is not equipped to accommodate an increase in vehicular traffic. The City's high-density layout and lack of additional roadway space means that the public right-of-way cannot be expanded to accommodate more vehicles lanes. Increases in traffic congestion are also known to create unsafe roadway conditions for all modes, as the risk of potential conflicts between pedestrians, bicyclists, and drivers increases with greater vehicle volumes. Existing casino-related traffic contributing to congestion on the City's roadways and future traffic threats projected from Wynn's planned developments indicate that the City must consider solutions that do not involve expanding the physical roadway.

Route 99, the Broadway corridor, in particular carries much of this traffic. With this corridor already experiencing congestion, traffic spills over onto ancillary arterials and collectors throughout the City as drivers seek alternate routes. Based on Encore reported total gross gaming revenue for 2019 (\$147.1M), 2020 (\$97.8M) and 2021 through Q3 (\$174.4M), traffic generated by those visiting the casino is on the rise with many casino trips either beginning, ending, or passing through on Malden's local roadways.

To that end, the City believes updating its antiquated traffic signals along the Broadway corridor serves as an effective mitigation strategy. The City of Malden requests mitigation funds to replace existing traffic control cabinets, install new signal posts, conduits, detection cameras, and audible push button units at four existing signalized intersections along the Broadway corridor. This work is needed in order to improve the operation of signalized intersections to process vehicle volumes with more efficiency. Most importantly, though, the new signalized intersections will be vital towards preserving

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public safety, as this project will ensure that pedestrians, bicyclists, and drivers avoid potential conflicts on the roadway. This work will build upon the Gaming Commission's previous 2018 and 2021 Broadway grants by funding and implementing some of the plans' identified safety improvement projects.

# b) Please provide documentation, specificity or evidence that gives support for the determination that the operation of the gaming facility caused or is causing the impact (i.e. surveys, data, reports)

It is important to note that since the casino opened in June 2019 and was shut down during its first year of operation due to the Covid-19 pandemic, documentation and analysis of traffic impacts on Malden as a surrounding community and 'transportation hub' are not available at this time. Rather, the city relies on a variety of anecdotal sources to inform this determination. These include field observations from the City's Engineering Office, constituent reports on the city's online reporting system (SeeClixFix), and raised concerns from City Council members. Broadway is consistently a point of contention in the City, as many residents do not feel safe using the corridor for driving, walking, and biking.

Throughout these sources, the Broadway corridor has been identified as experiencing some of the greatest increases in traffic congestion. This roadway is a critical access corridor that connects residents to the City's neighborhoods, economic districts, and other city services. The Broadway corridor also leads directly to the Encore Casino. With this in mind, it can be assumed that the increase in traffic congestion and reduction in roadway safety is contributed in part to the operations of Encore Casino.

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#### c) How do you anticipate your proposed remedy will address the identified impact?

This grant application requests funding to implement traffic signal improvements that will increase roadway safety and decrease traffic congestion. The main component of this project, the installation of new traffic signals, will directly remedy these impacts in the following two ways.

First, the proposed signal improvements are projected to increase the safety of vulnerable road users who need to cross at these intersections. With the installation of audible push button units, pedestrians and bicyclists will have accessible infrastructure that allows them to indicate when they need to use the crosswalks. The current infrastructure is outdated, unsafe, and not accessible to all individuals. These improvements are not only necessary to address safety concerns, but for ensuring that all residents and visitors can equitably use the roadway. This mitigation effort will ensure that the increased traffic volumes along the Broadway corridor, as attributed in part to the Encore Casino's operations, will not increase the risk of crashes for pedestrians and bicyclists.

Second, the signal improvements are projected to improve the operation and efficiency of vehicles travelling along the corridor. At the moment, all intersections along Broadway use antiquated or even broken induction loops to detect approaching vehicles. Without these working properly, the traffic signals are unable to detect the vehicles and cannot strategically change the signal according to current traffic patterns. For example, a broken induction loop would not change the signal for a vehicle waiting to cross at an intersection's side street. The installation of 360<sup>1</sup> degree cameras on top of the signal masts will correct this issue. Whereas the induction loops need ongoing monitoring and maintenance, the cameras will provide more accurate vehicle detection, signal changes, and overall travel efficiency along the corridor. In addition to these benefits, the cameras will be able to collect data on traffic volumes, meaning that ongoing data collection regarding Encore Casino's traffic congestion impacts can be monitored after project implementation.

## d) Please provide information demonstrating that the requested funds are supplementing and not supplanting historic operations funding.

The funds requested in this grant are not for any operational costs associated with the new traffic signals.

## 3. PROPOSED USE OF PUBLIC SAFETY MITIGATION FUNDS. (Please attach additional sheets/supplemental materials if necessary.)

a) Please identify the amount of funding requested. In determining the funding request, please round up to the nearest hundred dollars.

The City of Malden requests a total of \$200,000 to complete this work. This includes \$55,000 to support the design, bidding, and contracting award documents, and \$145,000 to fund procurement of the new traffic signal equipment and associated labor costs.

## b) Please identify below the manner in which the funds are proposed to be used. Please provide detailed scope, budget and timetable for the use of funds.

The City intends on expanding its contract with BSC Group, Inc., the consulting firm completing the City's 2021 Transportation Planning Grant - Broadway Improvements Plan, to support the design, bidding, and contracting for this project. The City will hire a general contractor to implement the work described herein within six months of receiving the grant. Attached to this application are detailed estimates for upgrading each of the four signalized intersections. A summary of the aforementioned costs is included below:

- 1. Intersection of Eastern Ave. / Route 60
  - a. Project Scope: Replace existing control cabinet; install one 360° camera on one mast arm; replace and install 8 new audible push button units; test and troubleshoot all upgrades
  - b. Estimated Cost: \$45,000
- 2. Intersection of Salem St.
  - a. Project Scope: Replace existing control cabinet; install one 360° camera on one mast arm; replace and install 8 new audible push button units; test and troubleshoot all upgrades
  - b. Estimated Cost: \$45,000
- 3. Intersection at Strata Apartments (500 Broadway)
  - a. Project Scope: Replace existing control cabinet and foundation; install new 8' traffic signal post on northwest corner including 100' of new conduit to connect to new control cabinet; install one 360° camera on one mast arm; replace and install 4 new audible push button units; test and troubleshoot all upgrades
  - b. Estimated Cost: \$46,000
- 4. Intersection of Elwell St. and Central Ave.
  - a. Project Scope: Replace and install 4 new audible push button units
  - b. Estimated Cost: \$5,000

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c) Please provide documentation (e.g. - invoices, proposals, estimates, etc.) adequate for the Commission to ensure that the funds will be used for the cost of mitigating the impact from the operation of a gaming establishment.

Attached to this application are detailed estimates for upgrading each of the four signalized intersections.

Oversight on this project will be provided by the City's Transportation Planner who will serve as the project manager. Coordination will also take place with the City's Engineer and Assistant Engineer. Invoices from the consultant would undergo a thorough internal review and approval process before Gaming Commission funds would be used to pay for said services.

#### d) Please describe how the mitigation request will address the impact indicated.

As stated beforehand, this grant application requests funding to implement traffic signal improvements that will increase roadway safety and decrease traffic congestion. The main component of this project, the installation of new traffic signals, will directly remedy these impacts. The proposed signal improvements are projected to increase the safety of vulnerable road users who need to cross at these intersections. With the installation of audible push button units, pedestrians and bicyclists will have accessible infrastructure that allows them to indicate when they need to use the crosswalks. The project will also improve the operation and efficiency of vehicles travelling along the corridor with the installation of 360<sup>®</sup> cameras. These will provide more accurate vehicle detection, signal changes, and overall travel efficiency along the corridor. In addition to these benefits, the cameras will be able to collect data on traffic volumes, meaning that ongoing data collection regarding Encore Casino's traffic congestion impacts can be monitored after project implementation.

## e) How will you provide the data for reporting? How will you measure the effectiveness of the proposed project in mitigating impacts?

The City of Malden will measure the effectiveness of this project in reducing crashes and decreases in vehicle queue times. The City will rely on the Malden Police Department's crash records and the Massachusetts Department of Transportation's top crash locations for vehicles, pedestrians, and bicyclists. Comparisons will be made prior to and after implementing signal upgrades to determine if a reduction in crashes is achieved as a result of the signal upgrades. Also, the City will monitor the Massachusetts Department of Transportation's Highway Safety Improvement Program (HSIP) top crash locations and crash clusters to determine if safety is improving or not along the Broadway corridor. Finally, the City will also observe and document the operational efficiency of each intersection after signal upgrades are constructed. A summary of all these findings will be provided to the Gaming Commission.

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#### 4. RELEVANT EXCERPTS FROM HOST OR SURROUNDING COMMUNITY AGREEMENTS

#### a) Please describe and include excerpts from any relevant sections of any Host or Surrounding Community Agreement.

Specific excerpts from Malden's Surrounding Community Agreement with Wynn, MA LLC are included below. These recognize that Encore Casino's visitors, workers, and vendors will travel into or through Malden and cause additional vehicular and pedestrian traffic, as well as safety concerns. This is attributed to the fact that Malden's historical connection to the City of Everett means that its roadways will inherently receive substantial traffic leading to the casino. These excerpts indicate that a direct remedy to traffic congestion issues along Broadway, as attributed to ongoing Encore Casino operations, is warranted in the form of upgrades to various traffic signals along the corridor.

#### Transitional Roads in Malden:

'The Parties recognize and agree that due to the historic connectivity between the City of Everett and the City of Malden (i.e., the City of Everett was formerly a part of the City of Malden), the roadway system flow from one city to the other. Therefore, certain improvements may be required in order to maintain a consistent aesthetic, quality, signage, and safety improvements.'

#### Public Safety Impact relating to Roadway Safety:

'As a result of the 'transportation hub' resulting in additional pedestrian and vehicular traffic, the Parties recognize and agree that there may be a need for increased police, fire, traffic and public works personnel to maintain roadway safety due to increased use.'

#### Malden as a Transportation Hub:

'To facilitate public transportation to the Project, the Parties shall identify a specific portion of the Malden Center MBTA station and/or surrounding area to be used exclusively for Wynn shuttles serving Wynn guests, invitees, employees and/or vendors of the Project arriving to the area via public transportation including buses, trains, water services, or commuter rail services.'

'The Parties will explore the use of covered parking facilities within the City of Malden to provide additional off-site parking for Wynn employees and/or vendors who would utilize Wynn shuttles to and from the Project. The specifics of such an agreement, if one can be reached, shall be contained in a separate document outlining the terms of such agreement in its entirety.'

'The Parties shall work together to promote Malden as a 'transportation hub' for Wynn guests, invitees, employees and/or vendors while also providing said individuals with a positive

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impression of Malden. The foregoing will be accomplished through mutually agreed upon promotional materials and improvements (including, without limitation, safety upgrades, improved lighting, fixtures, signage and beautification efforts) to the Malden Center MBTA station and surrounding area.'

'In addition, the Parties will work with Malden's business community to promote and support businesses so that they may benefit from and effectuate the use of Malden as a 'transportation hub,' as contemplated herein.'

#### b) Please explain how this impact was either anticipated or not anticipated in that Agreement.

The impact of increased traffic congestion and risks to public safety along the Broadway Corridor is not directly acknowledged within the Surrounding Community Agreement with Wynn, MA LLC. However, one excerpt regarding the Transitional Roads in Malden reads, 'certain improvements may be required in order to maintain a consistent aesthetic, quality, signage, and safety improvements.' Seeing that this project would like to directly remedy the quality of the roadway by reducing traffic congestion, while improving safety at crossing for pedestrians and bicyclists, the scope of this project aligns with the Agreement.

#### 5. INTERNAL CONTROLS/ADMINISTRATION OF FUNDS

a) Please provide detail regarding the controls that will be used to ensure that funds will only be used to address the impact.

The City of Malden will document all mitigation funds received to ensure that these funds are spent for the project purpose.

b) Will any non-governmental entity receive funds? If so, please describe. If non-governmental entities will receive any funds, please describe what reporting will be required and how the applicant will remedy any misuse of funds.

N/A

#### 6. CERTIFICATION BY MUNICIPALITY/GOVERNMENTAL ENTITY

On behalf of the aforementioned municipality/governmental entity I hereby certify that the funds that are requested in this application will be used solely for the purposes articulated in this Application.

Date: 1/31/22

Signature of Responsible Municipal Official/Governmental Entity

Gary Christenson

(print name)

Mayor

Title:

816.01

TRAFFIC CONTROL SIGNAL RECONSTRUCTION LOCATION NO. 1 (EASTERN AVE/RTE 60)

SAY	1	L

	POSTS					CONTROLLERS		
EA	Standard Type 8 FT	\$1,500			EA	Adaptive Signal Controller & System	\$50,000	
EA	Standard Type 10 FT	\$2,000			EA	Master Controller	\$10,000	
EA	Mast Arm 20 Ft Type	\$7,000		1	EA	Type 8W	\$15,000	\$15,000
EA	Mast Arm 25 Ft Type	\$8,500			EA	Fixed Time (Elec Mech)		
EA	Mast Arm 30 Ft Type	\$10,000			EA	Fixed Time (Solid State)		
EA	Mast Arm 35 Ft Type	\$12,000			EA	Time Based Control Unit		
EA	Mast Arm 40 Ft Type	\$15,000		1	EA	Testing & Adjustments	\$5,000	\$5,000
EA	Mast Arm 45 Ft Type	\$18,000			EA	Fire Pre-emptor	\$5,000	
EA	Strain Pole	\$7,500			EA	4 Channel Phase Selector	\$5,000	
EA	Standard Type 14 FT	\$800			EA	Coordination Units		
					EA	Modem	\$600	
	FOUNDATIONS				EA	Wireless Communications System	10000	
EA	Signal Pole	\$2,000						
EA	Mast Arm	\$8,000						
EA	Strain Pole	\$3,000						
EA	"M" Box	\$1,500						
						DETECTORS		
				1	EA	Allway Video Det. Camera & Mtg Ass.	\$15,000	\$15,000
					EA	Video Processor (2 Channel)	\$5,000	
	MISC. EQUIPMENT				EA	Magnetic Detector Relay		
LS	R & S Existing	\$12,000		8	EA	Audible Ped. Signal	\$1,200	\$9,600
EA	Time Clock				EA	Accessible Ped Signal	\$2,000	
EA	1 Circuit Flasher Mech				LF	Video cable	\$4	
EA	2 Circuit Flasher Mech				EA	Loop Osc & Relay Channel		
EA	1 Way, 3 Lens w/ Backplate(12")	\$1,800			EA	Card Rack for Pre-emption System	\$1,000	
EA	2 Way, 3 Lens w/ Backplate (12")	\$2,000			EA	Optical Detector - Single Direction	\$1,500	
EA	3 Way, 3/4/5 Lens w/ Backplate(12")	\$5,000			EA	Strobe Light	\$500	
EA	3 Way, 3 Lens (12")				EA	Amplifier, Dual Channel	\$700	
EA	2 way, 4/5 Lens w/Backplate (12")	\$4,000			EA	6 x 20 Quad. Wire Loop Detector	\$1,500	
	1 Way, 4 Lens w/Backplate	\$2,000				6x6 Quad. Wire Loop Detector	\$300	
EA	1 Way, 5 Lens w/ Backplate (12")	\$2,500			EA	Malfunction Management Unit	\$2,000	
EA	2 way, 3/5 Lens w/Backplate (12")	\$3,500			EA	Field Video Monitor w/Pointing Device	\$200	
EA	Fluted Jacket (10' Post)							
EA	Fluted Jacket (Mast Arm)					PULL BOXES		
EA	Pedestrian LED (count down)	\$1,800			EA	P.B 8"x 23"	\$400	
EA	Pedestrian Incandescent				EA	P.B 12"x 12"	\$600	
EA	Pedestrian Fiber-Optic (Symb.)				EA	EHH 24"x 13" x 36"	\$350	
					EA	EHH 24"x 24"x 36"	\$750	
					EA	P.B 12" x 24"	\$500	
	CONDUIT							
LF	3" Type NM - Single	\$23				CABLE		
LF	3" Type NM - Double	\$25			LF	# 12 AWG	\$8	
					LF	# 8 AWG	\$5	
					LF	Interconnect Cable System	\$15.00	
	OTHER							
LF	Wire Loop Conn Wire	\$5				SERVICE CONNECTION		
LF	Wire in Roadway	\$6			LS	Equip & Cable Underground	\$6,000	
					LS	Equip & Cable Overhead	\$5,000	
					LS	Utility Co. Charges	\$5,000	
		Sub-Total:	\$0				Sub-Total	\$44,600
							TOTAL	\$44,600

#### SAY \$45,000

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TRAFFIC CONTROL SIGNAL RECONSTRUCTION LOCATION NO. 1 (SALEM STREET)

SAY

1

	POSTS						CONTROLLERS		
EA	Standard Type 8 FT	\$1,500				EA	Adaptive Signal Controller & System	\$50,000	
EA	Standard Type 10 FT	\$2,000				EA	Master Controller	\$10,000	
EA	Mast Arm 20 Ft Type	\$7,000			1	EA	Type 8W	\$15,000	\$15,000
EA	Mast Arm 25 Ft Type	\$8,500				EA	Fixed Time (Elec Mech)		
EA	Mast Arm 30 Ft Type	\$10,000				EA	Fixed Time (Solid State)		
EA	Mast Arm 35 Ft Type	\$12,000		1		EA	Time Based Control Unit		
EA	Mast Arm 40 Ft Type	\$15,000			1	EA	Testing & Adjustments	\$5,000	\$5,000
EA	Mast Arm 45 Ft Type	\$18,000				EA	Fire Pre-emptor	\$5,000	<i><b>+</b>•,•••</i>
EA	Strain Pole	\$7,500				EA	4 Channel Phase Selector	\$5,000	
EA	Standard Type 14 FT	\$800				EA	Coordination Units	<i><b></b></i>	
		<b>4000</b>				EA	Modem	\$600	
	FOUNDATIONS					EA	Wireless Communications System	10000	
EA	Signal Pole	\$2,000				L/\	Whereas communications bystem	10000	
EA	Mast Arm	\$8,000							
EA	Strain Pole	\$3,000							
EA	"M" Box	\$3,000							
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						-	Magnetic Detector Relay	\$5,000	
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LS	R & S Existing	\$12,000			8	EA	Audible Ped. Signal	\$1,200	\$9,600
EA	Time Clock					EA	Accessible Ped Signal	\$2,000	
EA	1 Circuit Flasher Mech					LF	Video cable	\$4	
EA	2 Circuit Flasher Mech		-			EA	Loop Osc & Relay Channel		
EA	1 Way, 3 Lens w/ Backplate(12")	\$1,800				EA	Card Rack for Pre-emption System	\$1,000	
EA	2 Way, 3 Lens w/ Backplate (12")	\$2,000				EA	Optical Detector - Single Direction	\$1,500	
EA	3 Way, 3/4/5 Lens w/ Backplate(12")	\$5,000				EA	Strobe Light	\$500	
EA	3 Way, 3 Lens (12")					EA	Amplifier, Dual Channel	\$700	
EA	2 way, 4/5 Lens w/Backplate (12")	\$4,000				EA	6 x 20 Quad. Wire Loop Detector	\$1,500	
	1 Way, 4 Lens w/Backplate	\$2,000					6x6 Quad. Wire Loop Detector	\$300	
EA	1 Way, 5 Lens w/ Backplate (12")	\$2,500				EA	Malfunction Management Unit	\$2,000	
EA	2 way, 3/5 Lens w/Backplate (12")	\$3,500				EA	Field Video Monitor w/Pointing Device	\$200	
EA	Fluted Jacket (10' Post)								
EA	Fluted Jacket (Mast Arm)						PULL BOXES		
EA	Pedestrian LED (count down)	\$1,800				EA	P.B 8"x 23"	\$400	
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EA	Pedestrian Fiber-Optic (Symb.)					EA	EHH 24"x 13" x 36"	\$350	
						EA	EHH 24"x 24"x 36"	\$750	
						EA	P.B 12" x 24"	\$500	
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LF	3" Type NM - Single	\$23		I			CABLE		
LF	3" Type NM - Double	\$25		1	1	LF	# 12 AWG	\$8	
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LF	Wire Loop Conn Wire	\$5		1	1	1	SERVICE CONNECTION		
LF	Wire in Roadway	\$6		1	1	LS	Equip & Cable Underground	\$6,000	
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SAY \$45,000

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<u>816.03</u>

TRAFFIC CONTROL SIGNAL RECONSTRUCTION LOCATION NO. 1 (STRATA ENTRANCE)

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		POSTS				-		CONTROLLERS		
	EA		¢4.500				EA		¢50.000	
	EA	Standard Type 8 FT Standard Type 10 FT	\$1,500				EA	Adaptive Signal Controller & System Master Controller	\$50,000 \$10,000	
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	EA	Mast Arm 20 Ft Type	1 /			1	EA	1	\$15,000	\$15,00
		Mast Arm 25 Ft Type	\$8,500					Fixed Time (Elec Mech)		
	EA	Mast Arm 30 Ft Type	\$10,000				EA	Fixed Time (Solid State)		
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	EA	Mast Arm 40 Ft Type	\$15,000			1	EA	Testing & Adjustments	\$5,000	\$5,000
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	EA	Strain Pole	\$7,500				EA	4 Channel Phase Selector	\$5,000	
	EA	Standard Type 14 FT	\$800				EA	Coordination Units		
	_						EA	Modem	\$600	
		FOUNDATIONS					EA	Wireless Communications System	10000	
	EA	Signal Pole	\$2,000				_			
	EA	Mast Arm	\$8,000							
	EA	Strain Pole	\$3,000							
1	EA	"M" Box	\$1,500	\$1,500						
								DETECTORS		
						1	EA	Allway Video Det. Camera & Mtg Ass.	\$15,000	\$15,00
							EA	Video Processor (2 Channel)	\$5,000	
		MISC. EQUIPMENT					EA	Magnetic Detector Relay		
	LS	R & S Existing	\$12,000			4	EA	Audible Ped. Signal	\$1,200	\$4,80
	EA	Time Clock				1	EA	Accessible Ped Signal	\$2,000	\$2,00
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	EA	3 Way, 3/4/5 Lens w/ Backplate(12")	\$5,000				EA	Strobe Light	\$500	
	EA	3 Way, 3 Lens (12")	<i><b></b></i>				EA	Amplifier, Dual Channel	\$700	
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	EA	Fluted Jacket (10' Post)	<i>\</i> 0,000					The video menter wit onting bevice	<b>\$200</b>	
	EA	Fluted Jacket (Mast Arm)						PULL BOXES		
	EA	Pedestrian LED (count down)	\$1,800				EA	P.B 8"x 23"	\$400	
	EA	Pedestrian Incandescent	φ1,000				EA	P.B 12"x 12"	\$400 \$600	
	EA	Pedestrian Fiber-Optic (Symb.)					EA	EHH 24"x 13" x 36"	\$350	
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								# 8 AWG	\$5	
							LF	Interconnect Cable System	\$15.00	
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	LF	Wire Loop Conn Wire	\$5					SERVICE CONNECTION		
	LF	Wire in Roadway	\$6		ļ	I	LS	Equip & Cable Underground	\$6,000	
	_					I	LS	Equip & Cable Overhead	\$5,000	
	_						LS	Utility Co. Charges	\$5,000	
			Sub-Total:	\$4,000					Sub-Total	\$41,80
									TOTAL	\$45,80

SAY \$46,000

SAY 1 LS

WGP SOA

<u>LS</u>

<u>816.04</u>

#### <u>TRAFFIC CONTROL SIGNAL RECONSTRUCTION</u> <u>LOCATION NO. 1 (ELWEL ST/CENTRAL AVE)</u>

SAY 1 LS

	POSTS					CONTROLLERS		
EA	Standard Type 8 FT	\$1,500			EA	Adaptive Signal Controller & System	\$50,000	
EA	Standard Type 10 FT	\$2,000			EA	Master Controller	\$10,000	
EA	Mast Arm 20 Ft Type	\$7,000			EA	Type 8W	\$15,000	
EA	Mast Arm 25 Ft Type	\$8,500			EA	Fixed Time (Elec Mech)		
EA	Mast Arm 30 Ft Type	\$10,000			EA	Fixed Time (Solid State)		
EA	Mast Arm 35 Ft Type	\$12,000			EA	Time Based Control Unit		
EA	Mast Arm 40 Ft Type	\$15,000			EA	Testing & Adjustments	\$5,000	
EA	Mast Arm 45 Ft Type	\$18,000			EA	Fire Pre-emptor	\$5,000	
EA	Strain Pole	\$7,500			EA	4 Channel Phase Selector	\$5,000	
EA	Standard Type 14 FT	\$800			EA	Coordination Units		
					EA	Modem	\$600	
	FOUNDATIONS				EA	Wireless Communications System	10000	
EA	Signal Pole	\$2,000						
EA	Mast Arm	\$8,000						
EA	Strain Pole	\$3,000						
EA	"M" Box	\$1,500						
						DETECTORS		
					EA	Allway Video Det. Camera & Mtg Ass.	\$15,000	
					EA	Video Processor (2 Channel)	\$5,000	
	MISC. EQUIPMENT				EA	Magnetic Detector Relay		
LS	R & S Existing	\$12,000		4	EA	Audible Ped. Signal	\$1,200	\$4,800
EA	Time Clock				EA	Accessible Ped Signal	\$2,000	
EA	1 Circuit Flasher Mech				LF	Video cable	\$4	
EA	2 Circuit Flasher Mech				EA	Loop Osc & Relay Channel		
EA	1 Way, 3 Lens w/ Backplate(12")	\$1,800			EA	Card Rack for Pre-emption System	\$1,000	
EA	2 Way, 3 Lens w/ Backplate (12")	\$2,000			EA	Optical Detector - Single Direction	\$1,500	
EA	3 Way, 3/4/5 Lens w/ Backplate(12")	\$5,000			EA	Strobe Light	\$500	
EA	3 Way, 3 Lens (12")				EA	Amplifier, Dual Channel	\$700	
EA	2 way, 4/5 Lens w/Backplate (12")	\$4,000			EA	6 x 20 Quad. Wire Loop Detector	\$1,500	
	1 Way, 4 Lens w/Backplate	\$2,000				6x6 Quad. Wire Loop Detector	\$300	
EA	1 Way, 5 Lens w/ Backplate (12")	\$2,500			EA	Malfunction Management Unit	\$2,000	
EA	2 way, 3/5 Lens w/Backplate (12")	\$3,500			EA	Field Video Monitor w/Pointing Device	\$200	
EA	Fluted Jacket (10' Post)							
EA	Fluted Jacket (Mast Arm)					PULL BOXES		
EA	Pedestrian LED (count down)	\$1,800			EA	P.B 8"x 23"	\$400	
EA	Pedestrian Incandescent				EA	P.B 12"x 12"	\$600	
EA	Pedestrian Fiber-Optic (Symb.)				EA	EHH 24"x 13" x 36"	\$350	
					EA	EHH 24"x 24"x 36"	\$750	
					EA	P.B 12" x 24"	\$500	
	CONDUIT							
LF	3" Type NM - Single	\$23				CABLE		
LF	3" Type NM - Double	\$25			LF	# 12 AWG	\$8	
					LF	# 8 AWG	\$5	
					LF	Interconnect Cable System	\$15.00	
	OTHER							
LF	Wire Loop Conn Wire	\$5				SERVICE CONNECTION		
LF	Wire in Roadway	\$6			LS	Equip & Cable Underground	\$6,000	
					LS	Equip & Cable Overhead	\$5,000	
					LS	Utility Co. Charges	\$5,000	
		Sub-Total:	\$0				Sub-Total	\$4,800
							TOTAL	\$4,800

#### SAY \$5,000

SAY 1 LS