



## CITY OF KIRKLAND

Department of Public Works

123 Fifth Avenue, Kirkland, WA 98033 425.587.3809

www.kirklandwa.us

Council Meeting: 11/06/2013

Agenda: Unfinished Business

Item #: 10. a.

### MEMORANDUM

**To:** Kurt Triplett, City Manager

**From:** Public Safety Building Executive Steering Committee  
Dave Snider, Capital Projects Manager

**Date:** October 24, 2013

**Subject:** PUBLIC SAFETY BUILDING UPDATE AND PROPOSED FIRING RANGE

### RECOMMENDATION:

It is recommended that the City Council:

- Approves a construction contract change to complete the build-out of the Police Department Firing Range,
- Authorizes a Project budget increase of \$1,122,000 for the range using funds identified as part of the mid-biennial budget adjustments, and
- Receives a status update on the progress of the ongoing PSB construction.

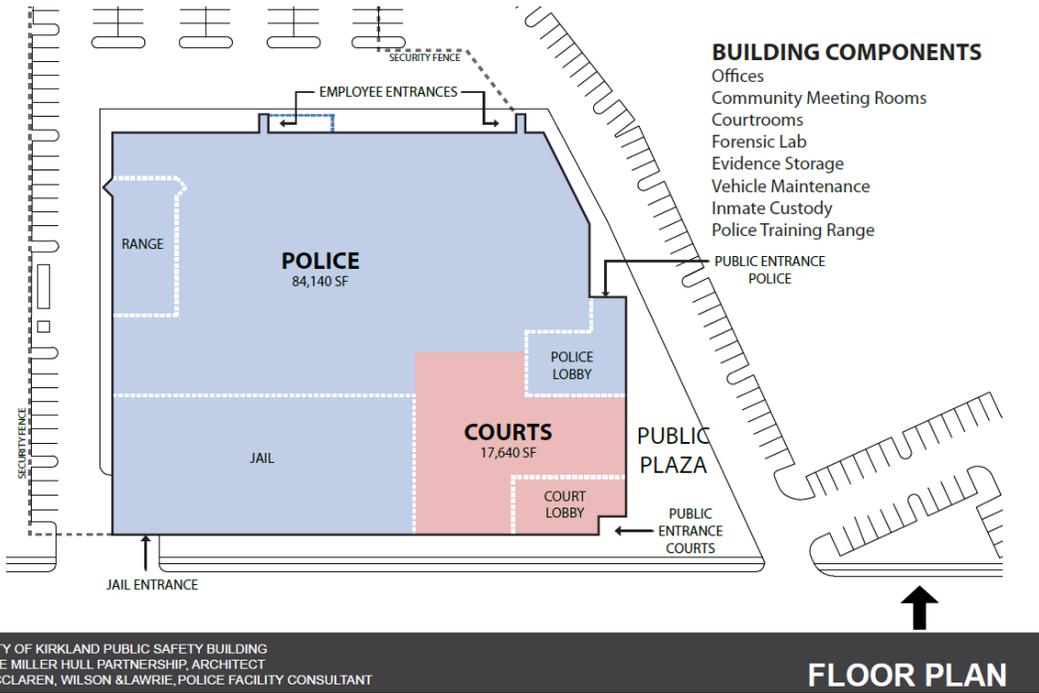
### BACKGROUND AND DISCUSSION:

The Public Safety Building (PSB) Project was first advertised for bids on March 6, 2013, and included a base bid with four separate additive alternates for Heating and Ventilation Controls (HVAC), an increased bed capacity for the Jail, a fully completed Police firing range, and expanding the amount of exposed ceiling structure to be painted. At their regular meeting of May 7, 2013, City Council awarded the contract for the PSB construction to Cornerstone General Contractors, Inc., Bothell, WA, in the amount of \$23,478,500, including \$22,805,566 for the Base Bid plus two additive alternates.

As part of the design development, leading to the advertisement for contractor bids, there were on-going discussions and evaluations regarding increasing the number of beds in the jail and of constructing a tactical training firing range for the Police Department. As discussed with City Council at their meeting of February 19, 2013, the inclusion of additive alternates for both were introduced -- at that time, the firing range was estimated to cost \$1,094,000. Upon receipt of the contractor bids; however, the contractor cost for completing the firing range came to \$952,540. The staff recommendation for award did not include the alternates to increasing the jail bed number (\$561,516) or completing the firing range (\$952,540) due to the impacts on the overall PSB budget. The original integrated firing range bid expired several months after it was not awarded. Subsequent total estimates are higher due to increased costs of adding the range into a project bid that was accepted, designed, scheduled and budgeted without range construction.

At the bid opening, the lowest bid price received exceeded the engineer's estimate and, concurrent with the award, City Council approved an increase of \$451,619 in the overall Project budget needed to fund the base scope of work and the additive alternate for HVAC (\$595,461); at that same meeting City Council (by a second motion) also approved an additional budget increase of \$77,473 to fund an expanded ceiling paint alternate. The resultant was a total construction contract amount of \$23,478,500. As outlined in the May 7, 2013 contract award memo(Attachment A), the additional funding for the budget increase needed to award the contract came from sources including design engineering contingency savings, Build America Bond interest, and REET 1 Reserves.

As designed, the PSB contains nearly 102,000 square feet of interior space. Within that area is 18,000 square feet dedicated to the Court for two large courtrooms, one smaller courtroom and staff office space. The Police Department area provides for 84,000 square feet for office including future growth space, a 55-bed jail, an area for tactical training, a firing range shell, a forensic lab and evidence processing.

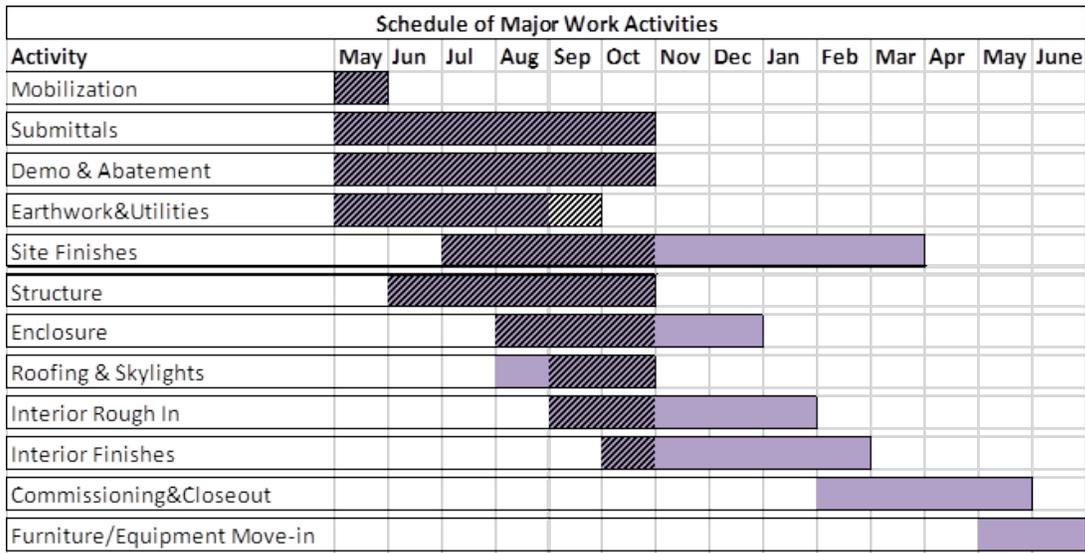


### Construction Progress Update

The major work activities completed to date include the building and site demolition, concrete wall modification, concrete wall pour backs, structural steel additions, roof trusses and dry-in, added structure for the firing range, site utilities, and building mechanical system plumbing. Activities in progress at this time are fire suppression rough-in, insulation, interior framing, electrical, drywall installation, storefronts, painting, and site work.

#### *Schedule*

With a May 20 start date, the project is currently 5 months into a 13 month overall schedule. The work is 40% complete against a projection of 42%. Specific work activities that have caused a lag in the overall schedule include the placement of the generator, which was delayed due to some mechanical system re-engineering needed in the early phase of the project, and mechanical system changes that resulted in more work to be done under the existing concrete slab that caused a delayed start in some early electrical work. However, this minor loss progress should be re-captured in November and the Project is deemed to be on schedule at this time.



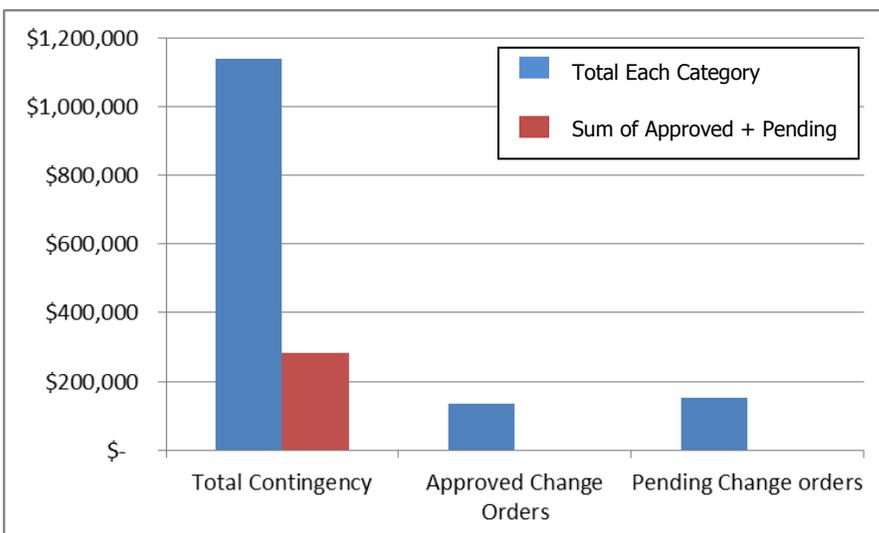
**Budget**

The Project expenditures are progressing well within the available contingency. The contingency budget set for this project was \$1,139,402 (approximately 5% of the construction contract amount). To date, the *approved* change orders are \$133,751, excluding Change Order #2 for the additional firing range structural add (not funded from the contingency) and a pending change order list of an additional \$151,023. The combination of the approved and pending change orders account for 1.2% of the total construction contract amount, well below industry standards for Design-Bid-Build "hard bid" public works projects. The normal change order percentage range is 3% for an excellent project to 8% on the high end of acceptable.

The change orders approved to date break out into the following percentages:

Category	% Approved	% Pending	% TOTAL
Unforeseen Conditions	.22	.17	.39
Design Coordination*	.33	.35	.68
Owner Initiated	.02**	0.12	.14
TOTAL	.57	0.64	1.21

\* Design Coordination refers to gaps or interpretation of the plans and specs  
 \*\* excluding the previous add for the firing range structure



Currently, 75% of the contingency budget remains available and the Project is considered to be on budget at this time.

#### *Challenges*

Overall the project is progressing smoothly. There have been some challenges with coordination of utilities to the site because the survey in the bid documents did not extend beyond the property line. The utilities needed to be connected from across NE 118<sup>th</sup> Street and there were numerous utilities already in the street which had to be avoided. Excellent teamwork between the contractor, the City of Kirkland Utilities staff, PSE and Verizon developed a solution which kept all existing utilities intact while adding the all new conduits and lines needed to serve the PSB.

#### *Upcoming Milestones and Work Tasks*

The next major milestone in the construction schedule is "Dry-In" which is the point in construction where the roof and building envelope are complete and the Contractor is able to begin heating the space. The conditioning of the space is significant to the installation of the finish materials: drywall, paint, wood products, flooring etc. The Contractor plans to reach dry-in by mid-December, at the latest.

Upcoming work tasks include interior framing, electrical rough-in, heating ventilation and air-conditioning rough-in, site paving and setting of rooftop air handling units, exterior fencing and security features.

### **Police Firing Range Request**

Concurrent with the construction phase for the PSB, Kirkland Police Department staff continued to seek funding to complete the firing range within the PSB as the Police Chief has identified finishing the firing range as one of his top operational priorities. Those efforts included research on the costs for external training, including overtime costs, travel time impacts on officers, as outlined in an accompanying memo (Attachment B), as well as the outreach effort directed towards other area law enforcement agencies in an effort to ascertain any interest in funding assistance. As a result of this outreach and other considerations, conditions have now changed making it advantageous for the City to move forward with completing the full scope of work for the firing range.

These changed conditions include preliminary interest by the King County Sheriff's Office (KCSO) to contribute funding in exchange for use of the range, together with the availability of significant one-time funding from under-expenditures in the 2013 Kirkland Police Department budget, and the cost differential between constructing the range during the current active project versus as a separate project in the future. As Construction Contract Change Order Number 1, City Council previously authorized \$160,000 to build out the shell of the firing range, and now the contractor has provided a proposal to complete the scope of work for an additional \$1.12 million. If completion of the range is approved by City Council, it will be authorized as a new change order, representing less than 5% of the total construction contract value. Completing the range after the PSB is finished and occupied will cost significantly more than finishing it now.

The table below summarizes the potential funding scenario based on information developed as part of the mid-biennial budget review process. The intent is to pursue participation by the KCSO in an amount that would contribute to the "additional funding needed"; those discussions are currently in progress. If those negotiations are not successful, the remaining funds could be authorized from one-time resources from unallocated revenues or additional expenditure savings from 2013.

**2013 Firing Range Financing Assumptions**

<b>Item</b>	<b>Amount</b>
Estimated Cost of Firing Range:	
Previously Authorized Amount to Construct Shell	160,000
Estimate to Complete Firing Range	1,112,000
<b>2013 Estimated Cost of Firing Range</b>	<b>1,272,000</b>
Funding:	
2013 Police Department Under-Expenditures:	
Personnel Costs	291,217
Supplies, Services & Other Costs	157,637
Jail Contract Costs	626,943
<b>2013 Estimated Police Department Under-Expenditures</b>	<b>1,075,797</b>
Previously Authorized Use of Secret Service Seizure Funds	85,000
<b>Add'l Funding Needed (One-time revenues, savings, and/or external revenue)</b>	<b>196,203</b>

**Timing for Firing Range Decision**

There are a number of financial reasons to proceed with the build-out now versus later. Given that the general contractor's teams and resources are already on site, they will be able to leverage their subcontractors to avoid incurring additional mobilization costs. They are currently able to add the work into their existing sequence so that additional management, oversight, and equipment costs can be shared with on-going activities and without impact to the overall schedule. Another advantage to adding the work at this time is the construction can be done in its normal sequence as opposed to having to demolish portions of the building later to accommodate the additional construction. Additionally, the firing range subcontractor that was the low bidder on bid date has agreed to hold his price from bid day.

Lastly, there is the issue of the escalating cost of construction. According to the Turner Construction Cost Index (<http://www.turnerconstruction.com/cost-index>), a widely recognized industry cost tracker, construction costs have been slowly but steadily rising with an overall growth of 4.33% over the same period last year. That one indicator alone could have a cost impact of \$50,000 per year on any future construction costs for the firing range.

Given the excellent progress being made on the PSB, a critical point has been reached and a City Council decision is needed on moving forward with the full build-out of the Police firing range. On October 17 the Public Safety Committee was briefed on the recommendation to complete the range and concurred with the staff recommendation.

**Next City Council Check-in**

The Public Safety Committee will be touring the building on November 21 starting at 8:30 a.m., and staff extends the invitation to all other Council members to attend if they wish. The whole building will be "dried-in" in December and another good opportunity to tour the facility will be in January or February as the framing will be essentially complete so as to get a good sense of the various spaces. Staff will plan on returning to City Council with another progress update at a regular Council meeting in spring, 2014.

Council Meeting: 05/07/2013  
Agenda: Unfinished Business  
Item #: 11. c.



**CITY OF KIRKLAND**

Department of Public Works  
123 Fifth Avenue, Kirkland, WA 98033 425.587.3809  
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**MEMORANDUM**

**To:** Kurt Triplett, City Manager  
**From:** Public Safety Building Executive Steering Committee  
**Date:** April 25, 2013  
**Subject:** Public Safety Building Project – Award Construction Contract

**RECOMMENDATION:**

It is recommended that the City Council awards the Public Safety Building Project construction contract to Cornerstone General Contractors Inc. of Bothell, WA in the amount of \$23,401,027 and authorize an increase in the project budget of \$451,619 to fund the base scope of work.

The Council may also wish to consider authorizing an additional increase of \$77,473 from REET 1 reserves to fund the expanded ceiling paint alternate in the construction contract.

**BACKGROUND AND DISCUSSION:**

The design phase of the Public Safety Building (PSB) project was complete at the end of February, 2013. The PSB project was first advertised for bids on March 6, 2013 complete with Supplemental Bidder Responsibility Criteria specific to completion of projects of similar size and scope. At this time of bid advertisement, the engineer's estimated total project cost was \$41,543,107 including a construction estimate of \$22,940,250. With previously approved funding of \$41,552,265, there was a remaining budget balance of \$9,158 left.

The bid opening was held April 5, 2013 with five bids received. The low bid was determined by the base bid amount; however heating, ventilation and air conditioning (HVAC) controls were bid separately as Alternates 5a, 5b and 5c; one of these three alternates must be included in the contract.

Current City facilities use Delta brand HVAC controls. In order to provide a competitive bid and maintain the ability to select a preferred supplier, the bids for HVAC controls were separated from the base bid. Three HVAC suppliers were identified to provide bids and the preferred supplier (Delta) provided the low bid. The base bid combined with the selected bid for HVAC controls (Contract Amount) is as follows:

Contractor	Base Bid	HVAC Control	Contract Amount
Construction Estimate	\$22,512,047.00	\$428,203.00	\$22,940,250.00
<b>Cornerstone General Contractors Inc.</b>	<b>\$22,805,566.00</b>	<b>\$595,461.00</b>	<b>\$23,401,027.00</b>
Construction Services Inc.	\$23,022,375.00	\$492,750.00	\$23,515,125.00
Berschauer Phillips	\$23,245,918.00	\$612,036.02	\$23,857,954.02
Allied Construction	\$23,323,500.00	\$657,000.00	\$23,980,500.00
Pease Construction	\$24,288,096.00	\$603,498.30	\$24,891,594.30

The low bid contract amount for the construction contract is \$23,401,027 and exceeds the engineer's estimate by \$460,777. With a total budget surplus of \$9,158 prior to opening bids a budget shortfall of \$451,619 now exists.

Staff recommends the following funding options to re-balance the budget:

The design and engineering phase is nearing completion, so it is appropriate to reduce the contingency for this phase from \$189,508 to \$50,000, offsetting \$139,508 of the professional services overage.	\$139,508
Interest earnings on the unspent Build America Bond proceeds have exceeded the projected amount. An additional \$130,553 is available to be used toward the project.	\$130,553
After the changes described above, a balance of \$181,558 remains, which is proposed to be funded using REET 1 reserves.	\$181,558
<b>Total</b>	<b>\$451,619</b>

At the April 18<sup>th</sup> Public Safety Committee meeting, interest was expressed in exploring options for funding the increased jail capacity alternate and the expanded ceiling paint alternate. The most logical funding source for these two alternatives is from the REET 1 reserve, which does have a healthy fund balance of over \$3 million. Staff does not recommend pursuing either one of these alternates as they were originally only intended to be funded if bids came in lower than the engineer's estimate. Additionally, analysis shows that there is no immediate Kirkland need to expand the jail size beyond 55 beds. The attached memo explains the current demand for jail beds in the region. (Attachment A).

At the same April 18<sup>th</sup> Public Safety Committee meeting, the question of how much more will it cost to construct the jail expansion at a later date was raised. Staff has reviewed the scope of work to complete the jail expansion at a later date. All work below the concrete slab is included in the current base scope of work for the project and the electrical and HVAC systems are sized to accommodate the jail expansion. This limits the amount of additional demolition and coordination with the buildings existing systems. The main cost increase to complete the work at a later date is the re-mobilization cost. 15% of the current construction cost of \$561,516 is estimated for re-mobilization.

The table below summarizes the cost to complete the jail expansion work at a later date in today's dollars.

Current bid amount for the jail expansion alternate	\$561,516
15% for re-mobilization	\$84,230
Total	\$645,746

Depending on when the work is completed additional cost associated with price escalation are expected. Including escalation, the jail expansion cost is expected to range from \$645,746 to \$730,000 if the work is completed within the next five years. Despite these potential cost increases, staff is not recommending completing the jail expansion at this time, given the lack of immediate need, the many jail bed options in the region and the potential opportunity cost of using significant REET 1 reserves while the City is implementing many capital projects.

However, the \$77,473 expanded ceiling paint alternative is substantially less than the jail alternative. If Council should choose to include this alternate in the construction contract, the funding requirement from REET 1 reserves would increase by \$77,473. Adequate funds within the REET 1 reserve exist to accomplish this alternate. A separate fiscal note is attached for Council consideration.

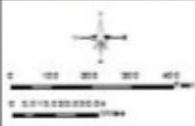
With an award of the contract by City Council at their May 7, 2013 meeting, construction will begin in May, 2013. A ground breaking ceremony is scheduled for Friday May 17<sup>th</sup>. An eleven month construction period is anticipated with an additional two months to complete punchlist items, close out and move in. Occupancy is expected at the end of June, 2014.

With design and bidding complete, staff has the design information to begin the procurement of furnishings and equipment for the building. To the extent possible, existing furnishings from Court and Police will be used. A list of required equipment and furnishings is currently being developed that identifies long lead items for early procurement.

The public art process is also underway. Staff has hired Perri Howard and Leslie Bain to coordinate the public art process. City representatives from the Police Department and Court, as well as representatives from the Kirkland Arts Commission, have met, toured local facilities with public art and are in the process of selecting artists. Staff will report back to Council this summer with an update to introduce the artists and their concepts.

- Attachment A: Jail Capacity Memo
- Attachment B: Fiscal Note – Base scope of work
- Attachment C: Fiscal Note – Including Ceiling Paint Alternate

**Public Safety Building**



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Public Safety Building

Existing Municipal Court

Open Space

**CITY OF KIRKLAND****Police Department**

123 Fifth Avenue, Kirkland, WA 98033 425.587.3400

www.kirklandwa.gov

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**MEMORANDUM**

**To:** Eric Olsen, Chief of Police

**From:** Michael Ursino, Administrative Captain  
Hiedi Popochock, Police Senior Financial Analyst

**Date:** October 30, 2013

**Subject:** Public Safety Building Firing Range Needs Assessment

**PURPOSE**

This memo will address the needs and uses of the proposed firing range for the Public Safety Building.

**BACKGROUND ON FIREARMS TRAINING**

The Kirkland Police Department (KPD) currently has 114 commissioned and non-commissioned officers that are armed with a firearm. It is imperative that officers maintain department firearm training standards and stay current on firearm safety. In order for officers to maintain department firearms training standards, officers have to successfully complete a series of qualification exercises that are conducted a minimum of twice a year. KPD currently utilizes three firing range facilities to conduct qualification exercises. The majority of the qualification exercises occur at the Issaquah Police Department (IPD) firing range. When the IPD firing range is not available, the department utilizes two private firing ranges. The private firing ranges are utilized mainly for remedial training and for firearms practice for off-duty officers.

Failing to train is an issue in law enforcement that has been addressed at many different levels, for many different reasons. Deadly force is one of those reasons. When it comes to firearms qualifications no court has made a specific decision on the frequency of qualifying, however, they have addressed the substance of the training. The minimum qualification interval mentioned above is the standard set by KPD General Orders and Procedures. The International Association of Law Enforcement Firearms Instructors (IALEFI), the body of professional firearms trainers have set the recommended level of qualifying as quarterly. According to IALEFI, "The learning curve required for the psychomotor skills needed for semiautomatic pistol manipulation is such that without constant and frequent reinforcement, those skills will deteriorate".<sup>1</sup> The International Association of Chiefs of Police (IACP), have suggested that firearms qualifications should preferably be held three times a year, and have suggested that annual, or even semi-annual, firearms training is insufficient for the purposes of avoiding liability.<sup>2</sup> The department's recommendation is to increase qualifications from twice per year to quarterly, and for training to occur as often as possible. The availability of a local firing range makes this recommendation feasible.

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<sup>1</sup> International Association of Law Enforcement Firearms Instructors – Training Standards (2004 Revision)

<sup>2</sup> International Association of Chiefs of Police Model Deadly Force Policy (2001)

Training does not simply mean point the weapon down range and pull the trigger. In addition to classroom instruction of deadly force policy and procedure and other topics, most trainers suggest the range instruction should include:

- Clearing stoppages with either hand
- Drills that simulate malfunctions
- Emergency tactical reloading with either hand
- Manipulation of safeties and de-cocking levers with either hand
- Low-light and judgmental (decision-making) shooting
- Shooting while moving to cover
- One-handed firing
- Giving verbal challenges
- Firing and clearing malfunctions from various "officer down" positions
- Engaging multiple targets

Qualifications conducted by KPD include all of the above topics. If an officer has an issue with any of them further training needs to be conducted. Although not all of the training would require a range, the advantage of live fire practice cannot be replaced with simulation.

A significant amount of range time is also needed for the National Integrated Ballistic Information Network (NIBIN) Program, which is managed by the United States Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF). To use NIBIN, firearms examiners or technicians enter cartridge casing evidence into the Integrated Ballistic Identification System (IBIS). These images are correlated against the database. Law enforcement can search against evidence from their jurisdiction, neighboring agencies, and others across the country. Currently, the weapons are given to instructors on range days to fire and collect the casings. The backlog of weapons to be tested continues to increase due to limited access to firing range facilities. It is absolutely imperative that KPD catches up on submitting evidence of firearms.

Completing a firing range in the Public Safety Building would not only create efficiencies it will also create opportunities to conduct real life scenario-based trainings that increase officer safety, effectiveness and reduced City liability. The current configuration will allow for 180 degree shooting at a moving target. Vehicles can be moved onto the range allowing officers to shoot from a seated position or around the hood of a car. All of this being done while the emergency lights are activated creating an atmosphere as close to reality as possible.

Other uses for the range include:

- Remedial training
- Monthly officer practice
- Gun Safety Courses
- Less lethal training
- Special Response Team Training
- Make-up training days
- Pre-academy qualifications
- Instructor development

## **DISCUSSION ON NEED**

There are several issues that surround qualifying and training 114 officers twice a year at different firing range facilities.

- Availability of range rental
- Availability of officers/training

### **Availability of Range Rental**

The limited range rental availability has forced KPD to pay the firearm instructors overtime in order to administer the mandatory qualification exercises. There have been several instances where the available days for the firing ranges did not coincide with the on-duty firearm instructors' schedules. This problem was further compounded when additional officers were added for annexation starting in 2010. In 2014, the new Kirkland Jail at the Public Safety Building will add three new non-commissioned officers that will have to complete the training and qualification exercises.

In late 2012, the IPD firing range was closed for six months for repairs and maintenance. The police department was tasked with qualifying 114 commissioned and non-commissioned officers at two private firing ranges.

### **Availability of Officers**

Currently the average patrol staffing for a 12 hour period is between 10.5 and 11 officers per shift. KPD allows three officers to qualify at a time. If at all possible an on-duty instructor is used for the day, to eliminate overtime. Currently, when officers go to an outside range to qualify, four of the on duty staff are out of the city for approximately three hours in order to complete the qualification exercise. Depending on which range is utilized the officers can take between 20 and 30 minutes to respond to an emergency in Kirkland. This not only slows down the response time considerably but requires that a make-up day on the range be scheduled resulting in additional costs. There are always make-up days for each qualification, again relying on the availability of a facility, instructor and the officer.

## **DISCUSSION OF FINANCIAL CONSIDERATIONS**

### **Cost of Range Rental**

In the past three years, KPD has spent approximately \$25K-\$28K annually for firing range rental fees and personnel overtime to conduct only qualification exercises, excluding the cost of officer travel time to and from the ranges.

KPD has spent a total of \$46,279 in firing range rental fees over the past three years. Officers have access to private firing range facilities for practice and remedial training, if needed. KPD has utilized two firing range facilities in Bellevue and one firing range facility in Everett. The department encourages officers to practice once a month by supplying fifty rounds of ammunition to officers. The table below illustrates a breakdown of range rental fees for the past three years.

### **Cost of Overtime for Instructors**

Instructor overtime has increased significantly due to the limited firing range availability and the number of officers to qualify. At a minimum, 684 hours are used for qualification exercises annually. The table below illustrates instructor overtime costs from 2010 to 2012 totaling

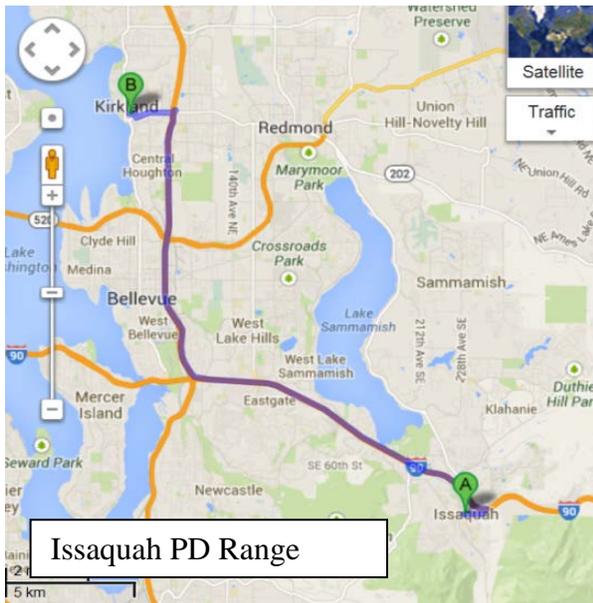
\$31,200. It is anticipated that the instructor overtime will be eliminated with access to a 24 hour facility. From 2010 to 2012,

Firearm Instructor Overtime Costs	
Year	Expenditures
2010	\$10,620
2011	\$11,743
2012	\$8,836 <sup>1</sup>

<sup>1</sup>Limited qualification exercises were conducted in 2012 due to lack of range availability.

Cost of Travel Time for Officers

Officer travel time to and from rented ranges was also calculated from 2010 through 2012. Allowing each armed officer an hour of total commute time (round-trip), 234 hours of time each year was spent commuting between the IPD firing range, Sam’s Gun Shop in Everett and/or Wade’s Gun Shop in Bellevue. An estimated total of \$8,190 was spent each year just on travel time and \$24,570 cumulatively over the last three years. This figure includes two round trips per armed officer in 2010 and 2011 and one round trip in 2012.

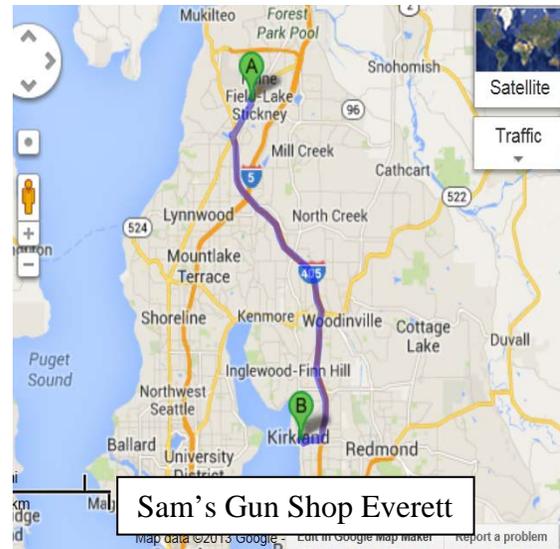


Even operating in a code response from the Issaquah range the congested traffic corridor of I-90 W and I-405 N presents challenges of it’s own including increased liability of running code in frequent grid lock.

**I-90 W and I-405 N**      **17.1 mi, 22 mins**  
● In current traffic: 23 mins

Responding from Sam's gun shop in Everett has similar issues to the I-90 corridor. The response time is about the same, but the traffic and weather conditions can dictate what the response time will actually be.

I-405 S 18.1 mi, 22 mins  
● In current traffic: 23 mins



### **BACKGROUND ON USE**

There are operating considerations surrounding the use of a range at the new Public Safety Building that are discussed below.

- Type of range
- Operation of range
- Rentals to outside agencies
- Cost of range operations
- Noise

#### Type of Range

There are basically two types of ranges available, leaded and lead-free. The type of range that has been identified by the consultant (McClaren, Wilson & Lawrie, Inc.) as the most appropriate for the Public Safety Building is a lead-free system. Although lead-free ammunition is more expensive, the maintenance of a leaded filtering system can be very costly. The firing range bid is based on a lead-free range and is controlled mostly by the type of ammunition.

- **Ammunition:** The significant source of particulate lead in an indoor range is the ammunition used. Lead-free ammunition is mandatory in a lead-free range and therefore must be controlled.

The use of both lead-free primers and totally encapsulated projectiles results in airborne lead being totally eliminated at the firing line and breathing zone. Reliable non-lead primers and projectiles are becoming the standard and continue to get better.

Lead-free ammunition (The Green Ammunition) has greatly improved over the past five years and can simulate a duty round. Historically, green ammunition would be twice the cost of leaded ammunition. Currently, the cost differential between the two types of ammunition is not as substantial anymore. KPD purchases leaded ammunition as soon as it is available. Lead-free ammunition is easier to locate and purchase. Currently the costs are about the same.

- **Maintenance:** Most lead-free ranges are maintained the same way. As described in the excerpt below.

*The rubber particle trap system needs to be mined periodically to recover the spent bullets that have been fired into them. . In other ranges of this type, mining has occurred anywhere from six to eight years after installation depending on use. The average cost of range mining is about \$150 dollars per linear foot. Based on the configuration of the range, it will cost about \$7,500 to mine.*

*Another option to the mining companies is to 'self-mine'. Mining the lead-free range is as simple as separating the projectiles from the ballistic rubber pellets. It is recommended that range owners contact firms that are knowledgeable about range technology and best suited for directing the range metals to the appropriate companies for further metal recycling. However, since the range is completely lead-free, the mining of the rounds is not a hazard or difficult because there is nothing to be sorted other than the projectile from the backstop particles.*

The maintenance and operation of this range is low and most maintenance can be done utilizing range personnel.

#### Operation of the Range

The KPD firing range will be operated by the Firing Range Master (FRM) which will be a part-time position filled by a current FTE. The FRM will manage the use of the range for KPD and will conduct or arrange the firearm training of officers, detention personnel, and court security in firearm and law enforcement equipment safety. The FRM will also manage the maintenance of the firing range and will maintain the inventory of ammunition and targets. The FRM will have five firearm instructors for assistance. Firearm instructors are full-time officers who provide firearm instruction as an ancillary assignment. KPD will be increasing the number of instructors by three to insure one firearm instructor is available at all times. Any instruction in the range by an outside agency will be conducted by a state qualified firearms instructor provided by the outside agency. This instructor will be given clear direction on the rules and regulations of the range.

The checkout system will be managed much like a rental car program. The Kirkland Police Firing Range Master or his delegate will check out the range to the agency prior to use and will inspect the range when they have finished.

Range rental to the general public will not be allowed; however, the opportunity to conduct firearms safety classes to the public will be scheduled a few times of year and will be at minimal cost. On-duty firearms instructors will be used eliminating overtime costs. The firing range would also be utilized to enhance the Citizen's Police Academy weapons familiarization segment at no charge.

#### Rental to Outside Agencies

Although the new firing range has not been identified as a revenue source, it has the potential to be rented out by surrounding agencies. The hourly rental rate for local firing ranges varies from \$35 to \$48, depending on day or night use. The KPD range could be rented anytime it is not in use by KPD which can provide some cost recovery. For example, KPD spent \$16,119 in range rental fees in 2011. The IPD firing range annual revenue for range rental in 2011 was \$34,100.

Currently several inquiries have been made by local Law Enforcement Agencies requesting use of the KPD range. Discussions are ongoing focusing on one time capital money and/or ongoing rental fees.

### Cost of Range Operation

- Facility maintenance includes electricity, light bulb replacement and HVAC service
  - \$7.62 per sf. @ 4194 sf. = \$87.00 per 24 hour day.
  - Janitorial services will be completed by corrections under the direction of the Range Master or his/her designee
- Range Master:
  - Added to current duties and absorbed with in the current FTE
- Range Equipment Maintenance:
  - To be determined
- Range mining is only needed about every couple of years, depending on the use
  - If needed \$3700.00 per year is a conservative estimate.

Total Per 24hr. day = \$97.01

Total Annual Cost = \$35,405

The annual cost of operating a KPD range 24 hours per day as proposed is roughly equivalent to the current costs of range rental, overtime and travel time. However, having the range located in Kirkland will allow significantly more training to be provided, as well as eliminating the need to send officers out of Kirkland to train. Thus for the same approximate costs, Kirkland gets better trained officers and more daily police coverage of the city.

### Range Operation Noise

The Public Safety Committee inquired about the sound isolation and whether the sound of gunfire would be heard within the building or on the exterior (especially adjoining properties). The noise levels have been addressed by BRC/Acoustics & Audiovisual Design. Analysis includes the following sound control and acoustical interior noise issues, in part:<sup>3</sup>

- Sound isolation from adjacent non-range spaces
- Fire-arms noise at exterior locations

The following excerpts from the consultant's report describes noise goals at interior areas

- In non-sensitive interior areas just west of the range, sound will be audible but low level (i.e. less than 35 dBA)
  - Evidence Storage

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<sup>3</sup> Complete analysis available upon request.

- Armory
  - Ready Room
  - Vehicle Maintenance
- In sensitive interior areas, west of grid G- will be nearly inaudible (i.e. 25 to 30 dBA or less)
    - Court
    - Records
    - Administration
    - Investigations
    - Public Entries

The following decibel chart has been added for reference purposes only.

Approximate Decibel Level	Examples
0 dB	the quietest sound you can hear.
30 dB	whisper, quiet library.
60 dB	normal conversation, sewing machine, typewriter.
90 dB	lawnmower, shop tools, truck traffic; 8 hours per day is the maximum exposure (protects 90% of people).
100 dB	chainsaw, pneumatic drill, snowmobile; 2 hours per day is the maximum exposure without protection.
115 dB	sandblasting, loud rock concert, auto horn; 15 minutes per day is the maximum exposure without protection.
140 dB	gun muzzle blast, jet engine; noise causes pain and even brief exposure injures unprotected ears; maximum allowed noise with hearing protector.

Further research is being done on whether noise from the range is audible on the exterior of the building and, if so, whether it can be heard from adjacent properties. Staff will provide more information at the Council meeting regarding noise impacts.

**Conclusion**

As the department grew so did the need for more range time and space. Evaluating current range practice indicated areas of concern, availability and associated costs. The closure of Issaquah in 2012 highlighted the risk of not having a Kirkland range. Building a range is expensive, however, the costs are mostly fixed and there is opportunity for cost recovery. Control of range space and time is a benefit not realized until a department struggles to find a location that meets the needs of the department, both in cost and availability.

Although the department has been qualifying twice a year, the goal is to qualify quarterly and to train whenever possible and as realistically as practical. Utilizing a 24/7 facility will ensure that officers are trained above a minimum standard, reducing liability for the City while creating a safer environment for officers and the public.