



**PUBLIC SAFETY SPACE NEEDS ASSESSMENT  
BOXBOROUGH, MASSACHUSETTS  
MARCH 17, 2015**

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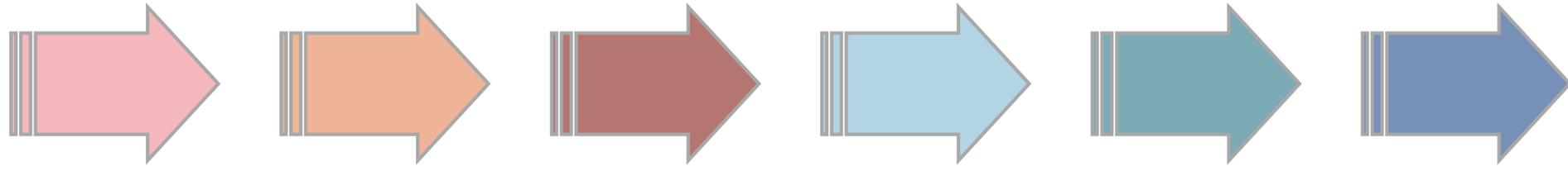
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## AGENDA

- Overview of Project Process to Date
- Existing Conditions Reports
  - Architectural
  - Structural
  - Civil
- Estimated Total Project Costs (TPC)
- Next Steps



# STUDY PROCESS



**SPACE NEEDS ASSESSMENT**

Meet with Police + Fire Departments to Understand Operations  
Observe Existing Facilities  
Compare Needs with Those of Similar Towns + Best Practices  
Develop Room Data Sheets + Room Sketches  
Finalize Ideal Building Program Incorporating Current + Future Space Needs

**KICK-OFF MEETING / VISIONING SESSION**

Establish Transparency + Inclusiveness  
Set Project Goals  
Define Town-Wide Concerns  
Build Consensus

**EXISTING CONDITIONS ASSESSMENT**

Collect Existing Data + Drawings  
Visual Survey of Buildings with Consultants  
Consider Physical + Operational Deficiencies  
Review Implications of Potential Reuse  
Prepare Architectural, Structural + Civil Existing Conditions Reports

**CONCEPTUAL DESIGN**

Develop Conceptual Design Options Testing Proposed Program on Existing Site  
Stand-Alone Police + Fire Stations  
Combined Public Safety Facility  
Renovation + Addition  
New Construction  
Committee Selects Three Options for Cost Development

**COST ANALYSIS**

Develop Estimated Probable Total Project Costs for Three Selected Options  
Hard Construction Costs Based on Historical Square Foot Costs for Similar Facilities  
Soft Costs Based on Typical Costs for Similar Facilities

**FINAL REPORT**

Prepare Draft Report for Committee Review + Comment  
**Committee Reaches Consensus Regarding Next Steps to be Taken**  
**HKT will Finalize Final Report Documenting Committee Decisions**

## EXISTING CONDITIONS REPORTS

- Architectural, Structural and Civil Assessment of Existing Facilities
  - Existing spatial and infrastructure deficiencies
  - Potential implications of selected renovation and new construction options



## EXISTING CONDITIONS REPORTS – POLICE STATION

- Existing Spatial Deficiencies:
  - Lacking administrative and support spaces (roll call, report writing, training)
  - Inadequate evidence processing + storage
  - Inadequate dispatch facilities
  - No acoustical privacy
  - No dedicated armory
  - Locker rooms are open to the path of egress
  - Building is not handicapped accessible



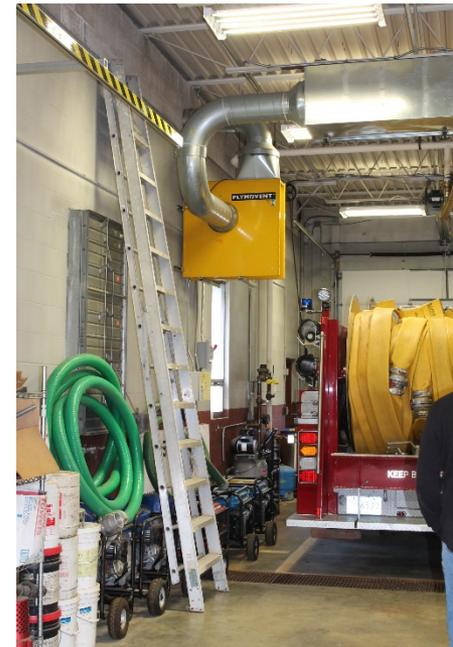
## EXISTING CONDITIONS REPORTS – POLICE STATION

- Due to roof lines and pitches, an addition will most likely be attached to the existing building, triggering compliance with current lateral load code requirements.
  - Existing reinforced CMU walls may require additional reinforcement
  - Wood framed walls may require additional structural hardware and plywood nailing
  - Existing trusses may require sistered 2x framing if new roof lines add additional loads
  - Partial demolition of the building from roof down to first floor + reconstruction may be an alternative



## EXISTING CONDITIONS REPORTS – FIRE STATION

- Existing Spatial Deficiencies:
  - Lacking administrative and support spaces (plan review, meeting, training)
  - Vehicle bays are undersized for modern apparatus
  - Turnout gear exposed to vehicle fumes
  - No decontamination room
  - Inadequate living spaces (dorm + day room) for staffing projections
  - Building is not handicapped accessible



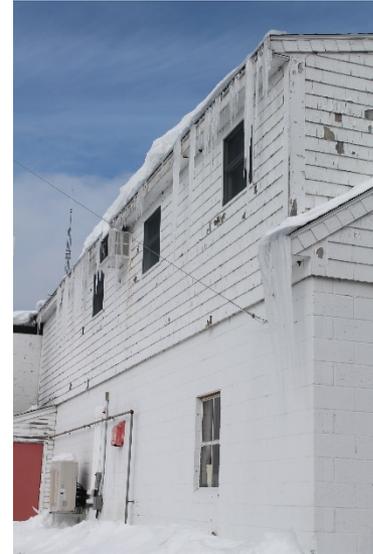
## EXISTING CONDITIONS REPORTS – FIRE STATION

- Any significant structural alterations, (such as new openings in CMU walls) will trigger compliance with current lateral load code requirements
  - Existing unreinforced masonry walls would require extensive retrofitting to meet the current code
  - The wood roof over the training room would require new structural hardware and a plywood overlay to the existing roof sheathing.



## EXISTING CONDITIONS REPORTS

- Both buildings may continue to serve their current functions, however:
  - Neither meets the current or future space needs of the departments
  - Town must address existing deferred maintenance issues and budget for future maintenance as the buildings age
    - Repair existing CMU walls and seal masonry regularly or install a veneer or rain-screen
    - Deteriorated bituminous paving
    - Aging mechanical systems
    - Aging windows, doors, finish systems, etc.



## ESTIMATED PROBABLE COST

- Three options selected for cost development:



C – REUSE POLICE STATION ONLY – MAJOR RENOVATIONS & ADDITIONS



F – ALL NEW CONSTRUCTION ON TWO LEVELS



G – ALL NEW CONSTRUCTION ON TWO LEVELS – FLIPPED PLAN

## ESTIMATED PROBABLE COST – HARD COSTS

	Option C - Reuse Police Station; Major Renovations + Additions	Option F - All New Construction	Option G - All New Phased Construction (Flipped Scheme)	Comments
<b>Square Footage</b>				
Demolition	8,469	13,082	13,082	
Major Renovations	4,613	0	0	
Additions / New Construction	30,354	34,967	34,967	
Total Building Square Footage	34,967	34,967	34,967	
<b>Estimated Hard Building Costs</b>				
Demolition (\$15 per square foot)	\$ 127,035	\$ 196,230	\$ 196,230	
Major Renovations (\$200 per square foot)	\$ 922,600	\$ -	\$ -	
Additions / New Construction (\$375 per square foot)	\$ 11,382,750	\$ 13,112,625	\$ 13,112,625	
Site Costs (10% of construction costs)	\$ 1,230,535	\$ 1,311,263	\$ 1,311,263	
Premium for Phased Construction	\$ -	\$ -	\$ 120,000	Assumes \$30,000/month additional general conditions for additional 4 months construction
Subtotal	\$ 13,662,920	\$ 14,620,118	\$ 14,740,118	
Escalation to Mid-Point Construction - 4.5%/yr for 2015 and 2016; 3.8%/yr for 2017 on	\$ 1,257,330	\$ 1,345,416	\$ 1,407,432	Assumes construction starting in June 2016. Options C + F assumes 14 months construction. Option G assumes 18 months phased construction.
Design and Estimating Contingency - 20%	\$ 2,984,050	\$ 3,193,107	\$ 3,229,510	
Subtotal	\$ 17,904,300	\$ 19,158,641	\$ 19,377,059	
Construction Contingency - 10%	\$ 1,790,430	\$ 1,915,864	\$ 1,937,706	
<b>Estimated Total Probable Hard Construction Costs</b>	<b>\$ 19,694,730</b>	<b>\$ 21,074,505</b>	<b>\$ 21,314,765</b>	

## ESTIMATED PROBABLE COST – SOFT COSTS

	Option C – Reuse Police Station; Major Renovations + Additions	Option F – All New Construction	Option G – All New Phased Construction (Flipped Scheme)	Comments
<b>Estimated Soft Costs</b>				
Architectural + Engineering Fees	\$ 1,790,430	\$ 1,915,864	\$ 1,937,706	10% of construction cost
Owner's Project Manager (OPM) Fees	\$ 447,608	\$ 478,966	\$ 484,426	2.5% of construction cost
Prequalification	\$ 7,500	\$ 7,500	\$ 7,500	Required at \$10M construction cost or at the Town's discretion
Printing Costs + Advertisement	\$ 15,000	\$ 15,000	\$ 15,000	
Legal Costs	\$ 25,000	\$ 25,000	\$ 25,000	
Financing	\$ -	\$ -	\$ -	To be determined
Commissioning	\$ 25,000	\$ 25,000	\$ 25,000	Assumes building not pursuing LEED certification
Testing	\$ 50,000	\$ 50,000	\$ 50,000	
Furniture, Fixtures + Equipment (FF+E)	\$ 246,649	\$ 246,649	\$ 246,649	Assumes office equipment at \$5/sf and furniture at \$8/sf; square footage excludes apparatus, equipment and detention spaces
Communications (dispatch, radio, antennas, etc.)	\$ 300,000	\$ 300,000	\$ 300,000	
Permitting	\$ -	\$ -	\$ -	Assumes Town will waive permitting fees
Abatement/HazMat Allowance	\$ 25,000	\$ 25,000	\$ 25,000	
Clerk of the Works	\$ 120,000	\$ 120,000	\$ 154,286	Options C + F assumes 14 months construction. Option G assumes 18 months phased construction.
Additional Services (survey, geotech, HazMat consultant, energy modeling, FF+E design, etc.)	\$ 75,000	\$ 75,000	\$ 75,000	
Utility Company Back-charges	\$ 50,000	\$ 50,000	\$ 50,000	

## ESTIMATED PROBABLE COST – SOFT COSTS CONTINUED

		Option C – Reuse Police Station; Major Renovations + Additions	Option F – All New Construction	Option G – All New Phased Construction (Flipped Scheme)	Comments
<b>Estimated Soft Costs Continued</b>					
Temporary Relocation and Moving Costs:					
	Transition Costs (movers to and from temporary building)	\$ 20,000	\$ 20,000	\$ 20,000	
	Temporary Building (rental of trailers for offices/living quarters) - \$6500/month plus delivery, installation, teardown and return fees	\$ 204,000	\$ 204,000	\$ 200,750	Options C + F assume temporary facilities for both departments through duration of construction. Option G assumes temporary facilities for PD admin through duration of construction and FD admin for 9 months.
	Temporary Building (purchase of tent for apparatus)	\$ 129,000	\$ 129,000	\$ -	
	Temporary Building Infrastructure/Site Services to Trailers/Tent (water, tight-tank, generator, antenna, computer, phone, etc. connections)	\$ 100,000	\$ 100,000	\$ 100,000	
	Temporary Building - Site rental costs	\$ -	\$ -	\$ -	TBD
	Prisoner processing and monitoring in adjacent community during construction	\$ -	\$ -	\$ -	TBD
	<b>Estimated Total Probable Soft Costs</b>	<b>\$ 3,630,187</b>	<b>\$ 3,786,979</b>	<b>\$ 3,716,317</b>	

## ESTIMATED PROBABLE COST – TOTAL PROJECT COST (TPC)

	Option C – Reuse Police Station; Major Renovations + Additions	Option F – All New Construction	Option G – All New Phased Construction (Flipped Scheme)	Comments
<b>Total Project Costs</b>				
Estimated Total Probable Hard Construction Costs	\$ 19,694,730	\$ 21,074,505	\$ 21,314,765	
Estimated Total Probable Soft Costs	\$ 3,630,187	\$ 3,786,979	\$ 3,716,317	
<b>Subtotal Estimated Probable Hard and Soft Costs</b>	<b>\$ 23,324,917</b>	<b>\$ 24,861,484</b>	<b>\$ 25,031,082</b>	
Owners Contingency - 3%	\$ 699,748	\$ 745,845	\$ 750,932	
<b>Estimated Total Probable Project Costs</b>	<b>\$ 24,024,664</b>	<b>\$ 25,607,328</b>	<b>\$ 25,782,015</b>	

## NEXT STEPS

- Options for funding requests at Town Meeting:
  - Continue feasibility study process to further the conceptual design and refine costs
  - Complete above tasks and develop chosen scheme through schematic design
  - Complete both tasks above and complete construction documentation and building construction through occupancy
- Communication to the Community



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**THANK YOU**