

## Aurora, IL | Indoor Mapping Solution

The City of Aurora, Illinois seeks a partner to build a "Digital Twin" of City buildings through accurate mapping and modeling of its infrastructure. This will be a multi-step engagement, beginning with imaging all in-scope rooms/floors/buildings before using modeling software to build the 2-Dimensional or ideally 3-Dimensional Digital Twin. The City prefers to find a partner to perform both elements, but may choose to split the work amongst qualified vendors.

**Priority Inventory Tab:** This tab provides a breakdown of the 28 "High Priority" properties Aurora project leaders intend to focus on for the first phase of this project. We have included square footage details as known by the project team to help facilitate your financial estimates in the next tab. □

**Phase 1 Pricing Tab:** The goal of this chart is to reach a total cost of Phase 1's mapping of the Priority Inventory at the base layer offering with added Genetec Security Camera linkage. Feel free to add rows as needed. □

**Ongoing Pricing Tab:** This Chart is similar to the one on the preceding tab, except it does not contain the specificity of building name, square footage, priority, and sequence. Aurora project leaders intend to image their entire building inventory over the next several years with their chosen partner, and would like to confirm your ongoing rates. □

**Aurora, IL | Indoor Mapping Solution - Priority Inventory**

The below chart provides a breakdown of the 28 "High Priority" properties Aurora project leaders intend to focus on for the first phase of this project. We have included square footage details as known by the project team to help facilitate your financial estimates in the next tab.


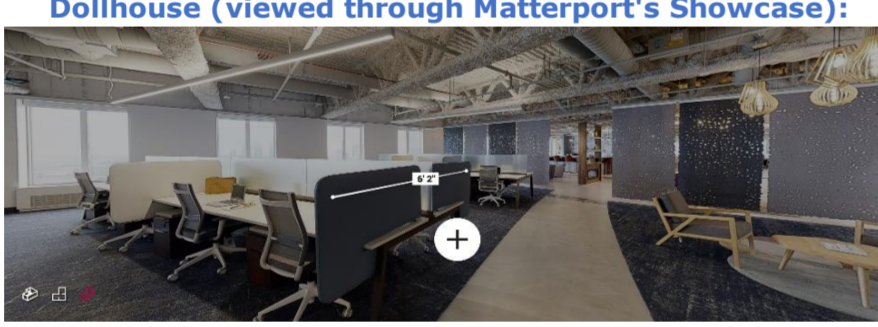
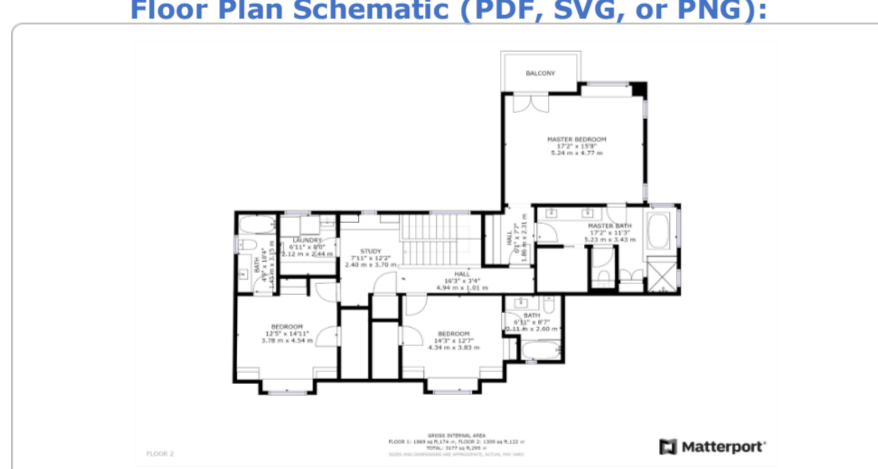
Description	Square Footage	# of Stories	Basement?	Occupied / Vacant	Address
Aldermen's Offices	4,017.01	3	Yes	Occupied	60-62E DOWNER PL
APD HQ	647,947.63	3	No	Occupied	1200 E INDIAN TR
Aurora Transportation Center / We lease the property from BNSF the structure is maintained by us	18,000.00	1	No	Occupied	233 N. Broadway
Central Fire Station	54,530.72	3	Yes	Occupied	75 N BROADWAY
City Hall	103,408.62	5	Yes	Occupied	44 E DOWNER PL
City Hall Annex	2,622.36	2	Yes	Occupied	15 WATER ST
Development Service Center Building - Downtown Aurora	32,602.80	3	Yes	Occupied	77 S BROADWAY
Elmslie Building - Partly Vacant Downtown Aurora	3,673.73	3	Yes	Occupied	1 S BROADWAY
Fire Station # 10	81,361.32	2	No	Occupied	2390 W ILLINOIS AV
Fire Station # 12	58,488.15	2	No	Occupied	2424 HAFENRICHTER RD
Fire Station # 5	168,780.44	1	No	Occupied	730 HILL AV
Fire Station #3	20,844.74	2	No	Occupied	600 W. Indian Trail & Highland
Fire Station #4	67,026.05	1	No	Occupied	800 MICHELS AV
Fire Station #7	97,350.13	2	No	Occupied	824 KENILWORTH PL
Fire Station #8	162,327.42	2	No	Occupied	3770 MCCOY DR
Fire Station #9	43,506.01	3	No	Occupied	2339 DIEHL RD
Hogan Building - Vacant Building Downtown	2,849.15	4	Yes	Occupied	51-57 E GALENA BL
Pierce Art Center/Historical Society	5,526.74	2	Yes	Occupied	20 E DOWNER PL
Stolp Island Parking Deck Offices,Shops - Downtown Aurora	67,784.10	5	No	Occupied	5 E DOWNER PL
TAS Building	41,435.52	2	No	Occupied	1211 RECKINGER RD
Vacant Building Downtown Aurora	3,245.97	2	No	Vacant	5 S BROADWAY
Venue - Downtown Aurora	6,868.25	2	No	Occupied	19- 21 S BROADWAY
<b>Water Treatment Plant</b>	<b>84,191.97</b>	<b>4</b>	<b>No</b>	<b>Occupied</b>	<b>1111 AURORA AV</b>
Customer Service	19,365.52	2	Unknown	Occupied	3770 MCCOY DR
Route 59 Metra Station	7,500.00	2	Unknown	Occupied	1090 N STATE ROUTE 59
River Edge Park	12,392.50	0	No	Vacant	360 N BROADWAY
<b>Water Treatment Plant - Main Pump Station</b>	<b>4,549.98</b>	<b>3</b>	<b>Unknown</b>	<b>Vacant</b>	<b>1110 AURORA AV</b>
<b>Water Treatment Plant - River Intake Building</b>	<b>2,526.17</b>	<b>1</b>	<b>Unknown</b>	<b>Vacant</b>	<b>1110 AURORA AV #B</b>
<b>Total</b>	<b>1,824,722.99</b>				

**Aurora, IL | Indoor Mapping Solution - Phase 1**

The purpose of this chart is to provide a comparable comparison between proposals for the Aurora project team to evaluate. We understand that some of this information has already been provided in some of your materials submitted to the City, but the stakeholders would like one final documentation to evaluate the cost of similar outcomes between proposals.

Please complete the chart below. The project leaders understand there are many options available, but would like to get a sense of your "Base Layer" offering - what is included and the price. **Please provide that overall Base Layer cost, and describe in the row below what features are included in that Base Layer.** While the team may wish to add other features and assets, a known priority is the Genetec Security Camera integration, which is also outlined below.

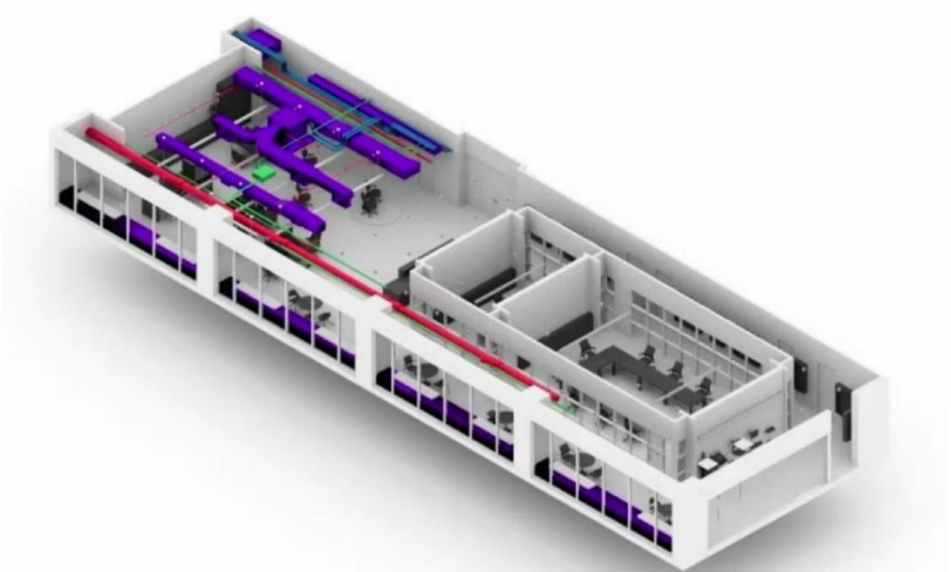

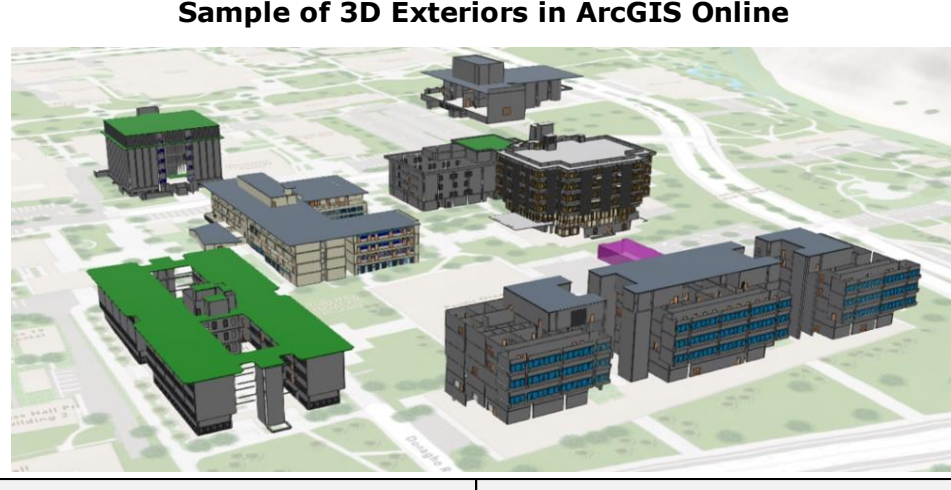
The goal of this chart is to reach a total cost of Phase 1's mapping of the Priority Inventory at the base layer offering with added Genetec Security Camera linkage. Feel free to add rows as needed.

Description of Service	Pricing Model (i.e. Cost-per-Square-Foot)	Unit Price (i.e. \$0.xx / sqft)	Phase 1 Total (28 Priority Buildings with 1,824,723 Sq. Ft.)	Notes and Assumptions
<b>Base Layer for Digital Twin</b>	Cost per Square Foot	\$0.085	\$155,101	Our unit price and Phase 1 Total price is based on the following assumptions: (1) Phase 1 is completed within 12 months of NTP (2) The same data collection process is used for all Phase 1 buildings (3) This price includes one data capture scan per building. Additional elective building scans can be added at the unit price shown (4) This price includes one round of edits to the ArcGIS Indoors file deliverables (draft and final), based on City QC and deliverable acceptance review (4) This price includes all Motiv/GeoConvergence team ancillary travel and expense costs (5) Price does not include the purchase or installation of ArcGIS Indoors software (6) Price assumes all 28 buildings are visited and collected (i.e., for this estimate no buildings will be ingested into ArcGIS Indoors based on existing CAD or design files). If as-built CAD or high-quality floor plans exist and the City does not want a field capture to be conducted, Motiv can provide unit pricing for ingest only.
Please list included features/assets in the Base Layer here. No need to provide broken out pricing, only for the first "Base Layer" row:	The base layer (base deliverable) will include the following, for the 28 Phase 1 priority buildings: <b>(1) ArcGIS Indoors Architecture, including:</b> -- Walls, halls, doors, stairways, escalators, and elevator shafts, half walls and cubicles -- delivered at BIM Level of Detail (LOD) 300: (Illustrated below) <b>(2) Matterport "Dollhouse" - hosted by Matterport Showcase application (which can be connected to any of the City's web-based applications and viewers)</b> <b>(3) Floor Plan Schematics (PDF, SVG, and PNG) (Illustrated below)</b> <b>NOTE:</b> Genetec camera linkages are not included in the base deliverable. See below for Genetec camera feed	See above	See above	Integration of Genetec Camera locations, as POIs (points of interest in ArcGIS Indoors), and real-time camera feeds are priced separately from the base deliverable. See below for Genetec camera integration price
		See above	See above	This data will be viewable within ArcGIS Indoors. This data can be shared with other Esri viewers and applications as web scenes and feature services.  The base price shown above includes integration of the data for the Phase 1 priority buildings into the City's ArcGIS Indoors environment.  Integration of these data into additional applications and viewers, beyond ArcGIS Indoors, can be performed by the Motiv/GeoConvergence team at an additional cost, as requested by the City.
		See above	See above	
		See above	See above	
<b>Genetec Security Camera Linkage</b>	One time fee	N/A	\$6,000	Linking of Genetec camera locations as ArcGIS Indoor POIs, with link to live (current) camera feeds, can be provided at the total sum cost shown.  This price is based on the following assumptions: (1) This price includes all cameras in the Phase 1 priority buildings only, for cameras that meet the following technical criteria: (1A) Each camera has a unique identifier (1B) Each camera has a unique URL/web hook providing a web service-based access to live/current camera video feed (1C) Each camera location is known, and shown on a map, schematic, or diagram that can be made available to the Motiv/GeoConvergence team (2) And each camera meeting the above criteria will be added as POI point features to the City's ArcGIS Indoors environment (3) Genetec cameras will be added for the Phase 1 buildings in a single, dedicated effort. Additional cameras can be added at a unit price as shown on

**Aurora, IL | Indoor Mapping Solution - Ongoing**

The purpose of this chart is to provide a comparable comparison between proposals for the Aurora project team to evaluate. We understand that some of this information has already been provided in some of your materials submitted to the City, but the stakeholders would like one final documentation to evaluate the cost of similar outcomes between proposals.

This Chart is similar to the one on the preceding tab, except it does not contain the specificity of building name, square footage, priority, and sequence. Aurora project leaders intend to image their entire building inventory over the next several years with their chosen partner, and would like to confirm your ongoing rates. Additionally, if you wish to provide additional rows for higher tiers of imaging beyond the "Base Layer," feel free to add additional detail.

Description of Service	Ongoing Pricing Model (i.e. Cost-per-Square-Foot)	Ongoing Unit Price (i.e. \$0.xx / sqft)	Ongoing Maintenance Fees for Data Captured in Phase 1	Notes and Assumptions
<b>Base Layer for Digital Twin - additional buildings beyond 28 buildings identified as Priority Inventory</b>	Cost Per Square Foot	\$0.085	\$126/hr labor cost	<p>Assumptions for additional building data capture:</p> <p>(1) Additional buildings are captured at the cost-per-square foot per unit pricing shown to the left</p> <p>(2) The same deliverables will be provided, as shown on the "Phase 1 Base Pricing" tab</p> <p>(3) A minimum fee for additional building collection will be \$800 - to accommodate labor fees for mobilization and equipment setup.</p> <p>(3A) For example, if the City requests the collection of an additional 2,000 sqft, the cost for that collection will be \$800.</p> <p>(3B) For example, if the City requests the collection of an additional 12,000 sqft, the cost for that collection will be \$1,020 (12,000 x 0.085).</p> <p>Assumptions for additional Genetec cameras:</p> <p>(1) Additional Genetec cameras are added at a labor rate of \$126/hr</p> <p>(2) The same technical assumptions for Genetec Cameras, as described on the "Phase 1 Base Pricing" tab, apply to additional cameras outside the Phase 1 priority buildings</p> <p>Assumptions for data maintenance:</p> <p>(1) Maintenance is priced as an hourly labor rate</p> <p>(2) Maintenance includes updates to previously-delivered ArcGIS Indoors files</p> <p>(3) Data maintenance is assumed to include modifications directly to the ArcGIS Indoors features and files</p> <p>(4) Maintenance is provided at an hourly labor rate cost for qualified Esri GIS technical staff</p> <p>(5) Recollect of additional building scans will be based on pricing</p>
<i>Please list included features / assets in the Base Layer here. No need to provide broken out pricing, only for the first "Base Layer" row:</i>	Same as the base layer deliverables as described on the "Phase 1 Base Pricing" tab	Same as above	Same as above	
<b>Additional Tiers / Features</b>	<b>Ongoing Pricing Model</b> (i.e. Cost-per-Square-Foot)	<b>Ongoing Unit Price</b> (i.e. \$0.xx / sqft)	<b>Ongoing Maintenance Fees for Data Captured in Phase 1</b>	<b>Notes and Assumptions</b>
<b>Additional Feature Option 1: BIM Files (Architecture + Furniture)</b>	Tiered Cost	Per Building Price, based on Building size, in sqft: < 1,000: \$400 1,000-5,000: \$1,000 5,000-10,000: \$2,000 10,000-25,000: \$4,175 25,000-50,000: \$8,432 50,000-75,000: \$14,425 > 75,000: \$15,500		<p>This cost is in addition to base price, on Phase 1 Base Pricing tab.</p> <p>Assumptions for BIM file deliverables:</p> <p>(1) BIM files would be delivered as Autodesk Revit (.rvt) files plus the following:                      --RVT file (compatible with Revit 2020 and newer)                      --DWG (Floor Plan)                      --DWG (Reflected Ceiling Plan)                      --IFC (Industry Foundation Classes)                      --RCS (ReCap Scan, a point cloud)</p> <p>(2) BIM files would include architecture features (as described in the base deliverable on the "Phase 1 Base Pricing" tab) + Furniture (including fixed and semi-permanent items such as tables, seating, cabinets, planters, appliances, and some wall fixtures)</p>
	<b>Sample of Architectural + Furniture BIM file</b>			
				
<b>Additional Feature Option 2: BIM Files (Architecture + MEP)</b>	Tiered Cost	Per Building Price, based on Building size, in sqft: < 1,000: \$590 1,000-5,000: \$1,430 5,000-10,000: \$2,340 10,000-25,000: \$4,675 25,000-50,000: \$9,730 50,000-75,000: \$16,485 > 75,000: \$21,465		<p>This cost is in addition to base price, on Phase 1 Base Pricing tab.</p> <p>Assumptions for BIM file deliverables:</p> <p>(1) BIM files would be delivered as Autodesk Revit (.rvt) files plus the following:                      --RVT file (compatible with Revit 2020 and newer)                      --DWG (Floor Plan)                      --DWG (Reflected Ceiling Plan)                      --IFC (Industry Foundation Classes)                      --RCS (ReCap Scan, a point cloud)</p> <p>(2) BIM files would include architecture features + MEP (generic models of visible systems pertaining to mechanical, electrical, plumbing, mechanical equipment, ducts, some conduits, some pipes, and outlets)</p> <p>The Motiv team would only recommend this BIM deliverable for 3 of the 28 Phase 1 Priority buildings (highlighted in yellow on the "Priority Inventory Overview" tab if the need for MEP BIM aligns with City priorities: Water Treatment Plant (\$21,465), Water Treatment Plant Pump Station (\$16,485), and River Intake Building (\$1,430).</p> <p>Beyond the 28 High Priority buildings, the Motiv team would recommend Architecture + MEP BIM files for only pump stations and well buildings and facilities if they align with City priorities for as-built documentation</p>
	<b>Sample of MEP BIM file</b>			
				
<b>Additional Feature Option 3: Building Exterior 3D Representations</b>	Cost Per Square Foot	\$0.01	\$126/hr labor cost	<p>This cost is in addition to base price, on Phase 1 Base Pricing tab.</p> <p>Assumptions for Building Exterior 3D representations for the 28 Phase 1 Priority Buildings:</p> <p>(1) Building exteriors can be captured at the same time as building interior scanning, at the cost of \$0.01/sqft</p> <p>(2) If the City wishes to create 3D building exterior models for all 28 of the Phase 1 priority buildings, the price would be \$18,300</p> <p>Assumptions for additional buildings following Phase 1:</p> <p>(1) Additional or subsequent collection and creation of 3D building exterior features will be at the unit price shown, with a minimum fee of \$800 to account for labor and equipment mobilization.</p> <p>The building exteriors will be delivered as 3D features in Esri format, ready for uploading into the City's AGOL and/or ArcGIS Enterprise environment(s). These files will be immediately usable in Esri 3D web scenes and applications.</p>
	<b>Sample of 3D Exteriors in ArcGIS Online</b>			
				
<b>Genetec Additional Cameras</b>				
<b>Genetec Security Camera Linkage - Additional Buildings Beyond the 28 Phase 1 Priority Buildings</b>	Labor Cost	\$126/hr	\$126/hr	<p>Additional Genetec cameras can be added as requested by the City, to either the Phase 1 priority buildings and/or additional buildings</p> <p>Assumptions:                      This hourly maintenance price is based on the following assumptions:                      (1) The additional cameras being added will meet the following technical criteria:                      (1A) Each camera has a unique identifier                      (1B) Each camera has a unique URL/web hook providing a web service-based feed to live/current camera video feed                      (1C) Each camera location is known, and shown on a map, schematic, or diagram that can be made available to the Motiv/GeoConvergence team                      (2) And each camera meeting the above criteria will be added as POI point features to the City's ArcGIS Indoors environment</p> <p>A fixed fee may also be negotiated based on a fixed number of cameras</p>