

2026 AERIAL IMAGERY FLYOVER **REQUEST FOR TAX MAP UPDATE FUNDS**

FROM ENGINEERING DEPARTMENT

STAFF REPORT

October 8, 2025

PURPOSE: To expend funds from the Tax Map Updating Fees account for the purpose of updating Hudson's Ortho (aerial imagery) and Planimetric data in the year 2026. Planimetrics consist of GIS shapefiles of structures, roads and other features. Both are critical tools for town staff in performing their duties in Assessing, Engineering, Planning and Zoning Departments.

ATTACHMENTS:

- A. Memo from Elvis Dhima, P.E., Director of Development Services, to Tim Malley, Chairman of the Planning Board & Brooke Dubowik, Town Planner, dated October 1, 2025 – Attachment "A"
- B. Project Proposal – 2026 3in Ortho and Planimetric update from NV5 Geospatial, dated October 3, 2025 – Attachment "B"

COMMENTS:

The last Ortho update was performed in the Spring of 2024, as well as the Planimetric, which was also partially funded by this account. Planimetric consist of GIS shapefiles of structures, roads and other features. Both tools are critical tools for town staff in performing their duties in the Assessing, Engineering, Planning and Zoning Departments.

As in the past, this is proposed to be partially funded by the Tax Map Updating Fee Fund, a fee collected in Site Plan and Subdivision Applications. The current balance of this account is \$10,070.00. The remaining cost is to be funded by the Engineering Department.

DRAFT MOTIONS

APPROVE funding of the project with Tax Map Updating Fees:

I move to approve and recommend to the Board of Selectmen the release of \$10,070.00 from the Tax Map Updating Fee Account, 01-0000-1312-000-505, for the 2026 Ortho & Planimetric Update project, in accordance with the request made by Elvis Dhima, Director of Development Services.

Motion by: _____ Second: _____ Carried/Failed: _____



TOWN OF HUDSON

Engineering Department

12 School Street
Hudson, New Hampshire 03051

Elvis Dhima, P.E., Town Engineer
edhima@hudsonnh.gov · Tel: 603-886-6008 · Fax: 603-816-1291

To: Tim Malley, Chairman of the Planning Board
Brooke Dubowik, Town Planner

From: Elvis Dhima, P.E., Development Services Director

A handwritten signature in black ink, appearing to be "Edhima", is written over the "From:" line.

DATE: October 1, 2025

RE: Request for Approval of Funds from Planning Board Tax Map Update

Recommended Motion:

To approve and recommend to Board of Selectmen the expenditure of \$10,070 related to the 2026 aerial imagery flyover using Account #: 1312-000-505 - Tax Map Updating Fees, for the amount of \$10,070.00.

Background

The Town of Hudson currently has high-resolution aerial imagery from Spring 2020, 2022, and 2024 (planimetric). These efforts were partially funded by the Planning Board's Tax Map Update Account (1312-000-505), which currently holds a balance of \$10,070.00.

We have been notified by our consultant of an upcoming flyover opportunity in Spring 2026 that would provide updated aerial imagery at 3-inch resolution. The quoted cost for Hudson's participation, including the planimetric update, is \$34,000.00.

The Development Services Division respectfully requests that the Planning Board recommend this expenditure to the Board of Selectmen. This project has broad support across multiple Town departments, including Assessing, Public Works, Fire, and Development Services.

October 3rd 2025

Town of Hudson
Attn: Elvis Dhima – Town Engineer
12 School Street
Hudson, NH 03051

Project Proposal – 2026 3in Ortho and Planimetric update

Dear Mr. Dhima:

NV5 Geospatial is pleased to respond to your request for proposal regarding the above referenced project. This proposal describes our understanding of the scope of work and services your project requires.

Summary of Work

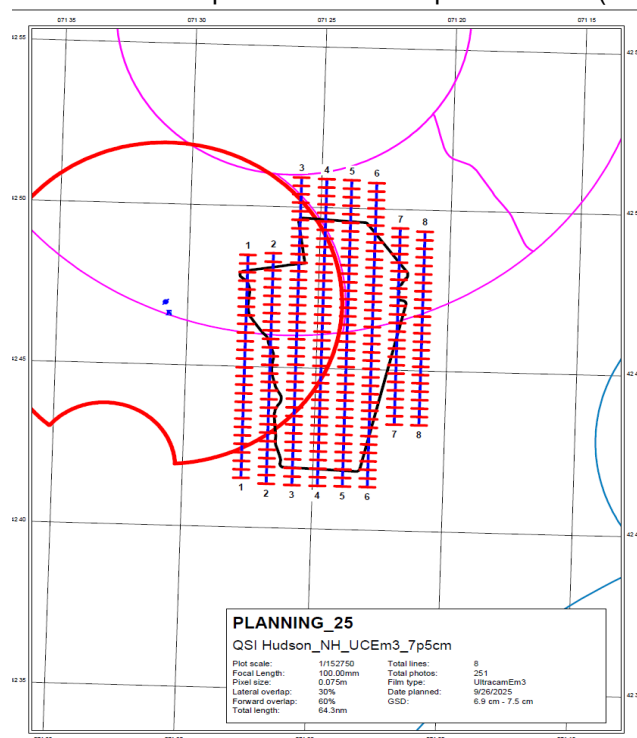
For this project, we will acquire aerial imagery from a large format high precision mapping camera mounted in a fixed-wing plane. Imagery will be captured at a 7.5cm or 3in resolution.

From these collections, we will produce the following:

- 3in 4bnad digital orthophotos
- Planimetric mapping update to 2026 data standards

Project Area

The entire Town plus the additional planned area (black polygon), totaling ~48mi² will be captured.



Survey Control

Based on previous capture years, 2020,2022. And 2024, no additional control is planned for this project.

Aerial Imagery and Photogrammetric Mapping

In 2020, 2022, and 2024 NV5 Geospatial did acquire 3in 4 band imagery. The new imagery will be collected with a large format digital camera in 4 bands (R, G, B, NIR) at 7.5cm (3") ground sample distance (GSD) with 60% along-track overlap, and $\geq 30\%$ sidelap. Flight parameters will be adjusted to collect imagery with a native pixel size (ground sample distance) of 7.5 cm.



Survey equipment placed by NV5I crew.

Orthorectification will be accomplished using known coordinates of photo-identifiable features within the study areas. Direct georeferencing typically results in accuracies of < 3 pixels when compared to ground targets. Individual ortho-rectified TIFFs will be mosaicked ensuring that any remaining radiometric differences between images are corrected. All four bands will be rectified, mosaicked and edited concurrently as one process. Mosaic lines will be non-apparent by carefully blending and editing seam location. The resulting data product is geo-rectified 8-bit, 7.5 cm (3") resolution imagery of the study area provided as tiled, color-balanced ortho-mosaic. Orthophotos will be collected during peak sun angles for the day, under clear conditions with minimal cloud cover.

Photogrammetric Mapping Update

Feature updates to collect similar to that of the 2024 project:

- Roads
- Buildings
- Driveways
- Parking
- Sidewalks
- Manholes
- Catch basins
- Hydrants
- Structure features captured from the 2026 planimetric data will compare to the 2024 structure layer and will be a stand alone layer provided to the town.

Please note that sidewalks and driveways will be converted to polygons if they are not already

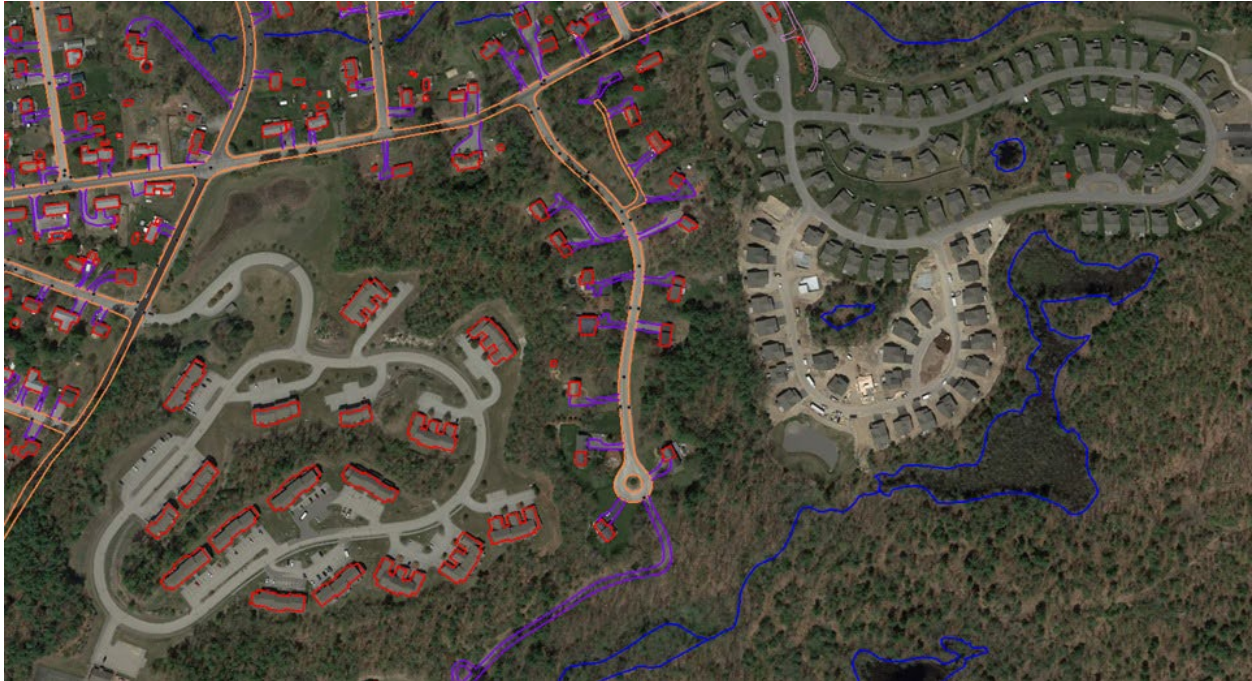


Figure: Town current features with update areas to collect

Schedule

NV5 anticipates the aerial acquisition will be performed in Spring 2026 (March – May). Based on anticipated workload, full delivery will be done within 3-4 months from date of collection.

Deliverables

Data will be delivered in UTM Zone 10, meters horizontal datum: NAD83 (2011), and vertical datum: NAVD88 (Geoid12B), **unless otherwise specified before final contracting.**

Imagery

Orthophotos

- Orthophoto tiles, 7.5 cm (3") GSD/resolution or better, *GeoTIFF format***Vectors**
 - Survey Boundaries, *shapefile format*
 - Orthophoto Index, *shapefile format*

Planimetrics

- **Geodatabase**

Cost and Payment Terms

Compensation for the services above are broken down below. A detailed breakdown of hours and rates are included in the Fee Estimate document:

Town of Hudson, NH Ortho and Planimetric update.			
Option	AOI	Services	Total
Hudson, NH	48mi2	3in 4band Orthos	\$23,500
Hudson, NH	32.5mi2	Planimetric Update	\$10,500
		GRAND TOTAL	\$34,000.00

For contracting purposes please use NV5 Geospatial as our company name. We no longer operate under Quantum Spatial.

NV5 Geospatial Representative

Sri Ratnala will be the assigned Project Manager and Brian Tolley will be the production manager and will represent us during the performance of the services to be provided under this agreement. They have the authority to transmit and receive instructions and make decisions with respect to the services and is authorized to commit the necessary resources towards completing the services described herein.

Authorization


If you would like to authorize NV5 Geospatial to proceed with the services described above and you agree with the fee schedule and payment terms, and the attached Standard Terms and Conditions which are part of this agreement, please return a signed original to NV5 Geospatial. We look forward to working with you and your staff to complete this project in a timely and cost-effective manner. Should you have any questions, please call me at 703-919-8038 or email me at the address shown below.

NV5 Geospatial.



Drew Meren
Sr. Account Manager – East Coast
Drew.meren@nv5.com

Signature Summary

PDS Contract:	2026 Hudson Ortho and Planimetric Update	
NV5 Project Number:	AR100804	
Proposal Date:	October 3 rd 2025	
Proposed To:	Town of Hudson	
	12 School St.	
	Hudson, NH 03051	
Submitted By:	Drew Meren – Sr. Account Manager East Coast	
Agreement:	This constitutes the entire agreement between the Town and NV5 Geospatial, as it relates to this project and that Notice to Proceed is given.	
	Town of Hudson	NV5 Geospatial
Authorized Signature:		
Printed Name:		Drew Meren
Title:		Sr. Account Manager
Date:		October 3 rd 2025

Terms and Conditions

1. The Agreement. This Agreement between the parties, which shall describe and govern Client's engagement of Consultant to provide services (referred to herein as "Services") identified in the Proposal, consists of the Proposal, these General Terms and Conditions, Consultant's pricing, and any exhibits or attachments referenced in any of these documents. Together these elements constitute the entire agreement between the parties, superseding any and all prior negotiations, correspondence, or agreements, either written or oral, with respect to the subject matter of this engagement.

2. Schedule. Consultant will use best efforts to perform Services in accordance with agreed upon schedule. Consultant is not responsible for delays as a result of acts of God, earthquake, fire, explosion, flood, the elements; strikes, lockouts, boycotts, picketing, labor disturbances or differences with workers; acts of the public enemy, war, rebellion, riots, acts of the government (federal, state, or municipal); shelter in place, quarantines, work restrictions or related government orders or mandates arising from or in connection with pandemics including COVID-19 (coronavirus), weather conditions adversely affecting aerial acquisition, flight clearances for access to air and space, aviation security restrictions, equipment failures or interruptions in communications systems; or any cause whatsoever beyond the control of the party in default. When such delays beyond Consultant's reasonable control occur, Client agrees Consultant shall not be responsible for damages nor shall Consultant be deemed to be in default of this Agreement. Further, when such delays occur, Client agrees that, to the extent such delays cause Consultant to perform extra services, such services shall be paid for by Client as extra services in accordance with paragraph.

3. Changes. Client may make changes in Services within the general scope of this Agreement (including, but not limited to, additions to or deletions from Services, suspension of performance, and changes in schedule) by giving Consultant written notice of the same. If a change causes an increase or decrease in the time or costs required to perform Services according to this Agreement, the schedule and compensation for such Services will be equitably adjusted to reflect such increase or decrease, and the Agreement will be amended in writing accordingly.

4. Billing and Payment. Consultant will issue progress invoices, including applicable taxes, thereafter to Client as work is performed, but no more frequently than weekly. Undisputed progress invoices are payable by Client thirty (30) days after receipt of the invoice. Where the method of contract payment is based on a time-and-materials basis, the minimum time segment for the charging of work is one half hour. Salary increases will become effective immediately upon Consultant's authorization and will be reflected in the next invoice submitted to Client. All payments will be made in United States Dollars. If Client objects to all or any portion of any invoice, Client will so notify Consultant in writing within ten (10) calendar days of the invoice date, identify the cause of disagreement, and immediately pay that portion of the invoice not in dispute. In the absence of written notification described above, the balance as stated on the invoice shall be deemed accepted. Invoices are delinquent if payment has not been received when due as set forth in this Section. In such an event, Client shall pay an additional charge of one and one-half (1.5) percent per month (or the maximum percentage allowed by law, whichever is lower) on any delinquent amount. Payment thereafter will first be applied to accrued interest and then to the principal unpaid amount. Consultant shall also be entitled to recover for all costs and expenses incurred (including any attorney's fees) in connection with collection of any delinquent amount. Consultant reserves the right to withhold all reports or deliverables and suspend any and all services, including but not limited to a stop work order on the project, unless and until payment is made by Customer in accordance with this Agreement.

Should Consultant be subpoenaed or called upon to testify for or on behalf of the Client or for consulting services on matters arising out of or related to the Work, Client shall compensate Consultant for its time at a rate of two times (2x) the Consultant's standard billing rates.

5. Termination. This Agreement may be terminated without cause by either party upon thirty (30) days written notice, and at any time by either party if the other party defaults in the performance of any material provision of this Agreement and such default continues for a period of seven (7) days after written notice thereof. In the event of termination, Consultant will be paid for Services performed through the date of termination, plus reasonable termination expenses, including the cost of completing analyses, demobilization, records and reports necessary to document job status at the time of termination.

6. Standard of Care. The parties will consult and cooperate to coordinate Services with the activities of Client employees and other representatives. The Services shall be performed in a manner consistent with the level of care and skill ordinarily exercised by members of Consultant's profession currently practicing under similar conditions and in the same locality as the Project. Consultant shall not be responsible for the use or interpretation of such information by non-parties to this Agreement. Consultant shall not be held liable for problems that may occur if Consultant's recommendations are not followed. In performance of Services and this Agreement, Consultant will comply in general accordance with applicable laws, ordinances, rules, regulations, orders, licenses, permits, and other governmental requirements (including, but not limited to, such requirements imposed on Client with respect to Services).

7. Relationship of Parties. Consultant is an independent contractor, not an employee or agent of Client. Without limitation of the foregoing, Consultant will (a) not enter into any contract, agreement, or other commitment, or incur any obligation or liability, in the name or otherwise on behalf of Client; (b) not be entitled to any worker compensation, pension, retirement, insurance, or other benefits afforded to employees of Client; (c) provide for federal income tax and other withholding related to Consultant compensation; (d) pay social security, unemployment, and other employer taxes related to Consultant employment, employees, or compensation; (e) provide worker compensation and other insurance related to Consultant employment or employees; and (f) perform all reporting, recordkeeping, administrative, and similar functions related to Consultant employment, employees, or compensation.

8. Reports. If requested by Client and agreed to by Consultant, Consultant will prepare and submit to Client a written report describing Services performed during the prior month and Services planned for the current month.

9. No Liability for Others. Consultant shall not be responsible for the acts or omissions of the Client, other consultants, contractors, subcontractors, other third parties or their respective agents, employees, assigns, successors, or other persons performing any of the work. Consultant shall promptly notify Client if Consultant becomes aware of any inconsistencies in the Services or information provided by other parties.

10. Confidential Information. Information acquired by Consultant in connection with Services (from Client or a third party or developed by Consultant) and not generally available to the public will constitute confidential information of Client (*Confidential Information*). "Confidential Information" shall include any and all oral, written or electronically transmitted information of a proprietary nature which is either owned by the Parties, or owned by any affiliate of the Parties and licensed to the other Party, including, but not limited to, any information relating to services or products that is not generally available to the public, including without limitation, identification of customers; business methods, strategies and practices;

internal operations; pricing and billing; financial data; costs; personnel information; customer and supplier contacts and needs; sales lists; technology; software; computer programs; computer systems; inventions; patents-pending; product development; trade secrets of any kind; any information designated as confidential by either Party or that Party's clients; and all oral, written or electronically transmitted information learned by the receiving Party from the disclosing Party's employees, agents, or through inspection of the other Parties' property, that relate to the categories of information listed above.

Confidential Information shall not include information that (i) is now or subsequently becomes generally available to the public through no fault or breach of this Agreement on the part of the receiving Party; (ii) the receiving Party can demonstrate to have had rightfully in its possession prior to disclosure by the other Party; (iii) is independently developed by either Party without the use of any Confidential Information; or (d) the receiving Party rightfully obtains from a third party who has the right to transfer or disclose it without a duty of confidentiality and/or nondisclosure.

Consultant will use and disclose Confidential Information only as reasonably required for performance of Services in accordance with this Agreement or as otherwise authorized in writing by Client. Consultant will not publish Confidential Information without prior written consent of Client. Without limitation of the foregoing, Consultant will not divert or misappropriate Confidential Information for Consultant benefit or the benefit of a third party. Consultant will take appropriate steps to protect Confidential Information from unauthorized use or disclosure.

11. Confidential Materials. Materials acquired by Consultant in connection with Services (acquired from Client or a third party or developed by Consultant) and not generally available to the public will constitute confidential materials of Client (*Confidential Materials*). Confidential Materials may include, without limitation, plans, designs, specifications, recommendations, reports, documents, notes, photographs, computer programs, prototypes, samples, and other materials that contain Confidential Information. Consultant will use, copy, publish, and distribute Confidential Materials only as reasonably required for performance of Services in accordance with this Agreement or as otherwise authorized in writing by Client. Consultant will take appropriate steps to protect Confidential Materials from unauthorized use, copying, publication, or distribution. Consultant will deliver Confidential Materials to Client on request.

12. Intellectual Property and Ownership of Documents. "Intellectual Property Rights" means all (a) patents, patent disclosures and inventions (whether patentable or not), (b) trademarks, service marks, trade dress, trade names, logos, corporate names and domain names, together with all of the goodwill associated therewith, (c) copyrights and copyrightable works (including computer programs) and rights in data and databases, (d) trade secrets, know-how and other confidential information, and (e) all other intellectual property rights, in each case whether registered or unregistered and including all applications for, and renewals or extensions of, such rights, and all similar or equivalent rights or forms of protection in any part of the world. "Pre-Existing Materials" means all documents, data, know-how, methodologies, software and other materials, including computer programs, reports and specifications, provided by or used by in connection with performing the Services, in each case developed or acquired prior to the commencement or independently of this Agreement.

Each party will retain all right, title, and interest in and to its own Pre-Existing Intellectual Property irrespective of any disclosure of such Pre-Existing Intellectual Property to the other party, subject to any licenses granted herein. All documents prepared by the Consultant pursuant to this Agreement, including but not limited to reports, field data, field notes, laboratory test data, calculations, and estimates are instruments of service in respect to the subject project. As such, the originals of all such documents shall be retained by and remain the property of the Consultant. The Client shall be entitled to copies of all such documents produced by the

Consultant for the subject project. It is understood and the parties agree that the Client shall not use or reuse said documents or information contained therein for additions or modifications to the subject project, for other projects, or for completion of this project by another consultant, except by prior written agreement between the parties hereto and with appropriate compensation to the Consultant for such use or reuse. Any such use or reuse by the Client shall be at the Client's sole risk and without liability or legal exposure to the Consultant. Further, the Client shall defend, indemnify and hold harmless the Consultant, its officers, associates, servants, employees, consultants and agents, from and against any and all claims, demands, damages, losses or expenses of whatever kind or nature, including attorney's fees, arising out of or claimed to arise out of any such unauthorized use or reuse of said documents or information.

13. Governing Law and Survival. The validity of this Agreement, these terms, their interpretation, and performance shall be governed by the laws of the State in which the Project is located. If any of the provisions contained in this Agreement are held illegal, invalid, or unenforceable, the enforceability of the remaining provisions will not be impaired. Limitations of liability, indemnification, and non-solicitation & hiring of employees shall survive the termination of this Agreement for any reason. The failure of a party hereto at any time or times to require performance of any provision hereof shall in no manner affect its right at a later time to enforce the same. No waiver by a party of any condition or of any breach of any term contained in this Agreement shall be effective unless in writing and signed by the waiving party, and no waiver in any one or more instances shall be deemed to be a continuing waiver of any such condition

or breach in other instance or a waiver of any other condition or breach of any other term.

14. Limitations of Liability. No employee or agent of Consultant shall have individual liability to Client. To the fullest extent permitted by law, and notwithstanding any other provision of this Agreement, the total liability, in the aggregate, of the Consultant, and its officers, directors, partners, employees, agents and sub-consultants, and any of them, to the Client and anyone claiming by, through or under the Client, for any and all claims, losses, costs or damages of any nature whatsoever arising out of, resulting from or in any way related to the Project or the agreement from any cause or causes, including but not limited to the negligence, professional errors or omissions, strict liability, breach of contract or warranty, express or implied, of the Consultant, and its officers, directors, employees, agents or sub-consultants, or any of them, shall not exceed the total compensation received by the Consultant, for Services provided under this Agreement or \$50,000 whichever is less. If Client desires a limit of liability greater than that provided above, Client and Consultant shall mutually agree in writing as to the amount of such limit and the additional compensation to be paid to Consultant for assumption of such additional risk. IN NO EVENT AND UNDER NO CIRCUMSTANCES SHALL CONSULTANT BE LIABLE TO CLIENT FOR LIQUIDATED, CONSEQUENTIAL, INCIDENTAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES.

15. Indemnification. Client agrees to indemnify and save harmless Consultant and any affiliation thereof, its officers, agents and employees from and against any and all claims and liability, loss, expenses, suits, damages, judgments, demands, and costs (including reasonable legal fees and expenses) arising out of: (i) the acts or omissions of Client, its employees, agents or its subcontractors; (ii) injury or death to persons, or loss of or damage to property, or fines which may result by reason of buying, selling, distribution, or use of any goods or services provided under this Agreement except to the extent that such damage is due solely and directly to the negligence of Consultant; (iii) false claims submitted by Client under this Agreement or as a result of a Client misrepresentation of fact, or fraud by Client.

16. Assigns. Client may not assign this Agreement or any right or obligation hereunder without the prior written consent of Consultant, which shall not be unreasonably withheld or delayed; provided, however, that no consent shall be necessary in the event of an assignment to a successor entity resulting from a merger, acquisition or consolidation by either party or an assignment to an Affiliate of either party if such successor or Affiliate assumes all obligations under this Agreement.

17. Dispute Resolution. The Client shall make no claim for professional negligence, either directly or by way of a cross complaint against the Consultant, unless the Client has first provided the Consultant with a written certification executed by an independent consultant currently practicing in the same discipline as the Consultant and licensed in the State where the Project is located. This certification shall: (a) contain the name and license number of the certifier; (b) specify the acts or omissions that the certifier contends are not in conformance with the standard of care for a consultant performing professional services under similar circumstances; and (c) state in detail the basis for the certifier's opinion that such acts or omissions do not conform to the standard of care. All claims, disputes, controversies or matters in question arising out of, or relating to, this Agreement or any breach thereof, including but not limited to disputes arising out of alleged breaches of contract, errors, omissions, or acts of professional negligence, (collectively "Disputes") shall be submitted to mediation before and as a condition precedent to pursuing any other remedy. Upon written request by either party to this Agreement for mediation of any dispute, Client and Consultant shall select a neutral mediator by mutual agreement. Such selection shall be made within ten (10) calendar days of the date of receipt by the other party of the written request for mediation. In the event of failure to reach such agreement or in any instance when the selected mediator is unable or unwilling to serve and a replacement mediator cannot be agreed upon by Client and Consultant within ten (10) calendar days, a mediator shall be chosen as specified in the Mediation Rules of the American Arbitration Association then in effect, or any other appropriate rules upon which the parties may agree. Any cause of action brought against Consultant shall be brought within one year of the work or Services performed under this Agreement. In an action, suit, or other legal proceeding to enforce a right or remedy under this Agreement, the prevailing party will be entitled to recover its costs and expenses (including, without limitation, expert witness and attorney fees) reasonably incurred in connection with such action, suit, or other proceeding or any appeal thereof. Each party waives its right to a jury trial in any court action arising between the parties, whether under this Agreement or otherwise related to the work being performed under this Agreement.

18. Hazardous Waste or Toxic Materials. Client acknowledges that Consultant's scope of services for this project does not include any services related in any way to asbestos and/or hazardous or toxic materials. Should Consultant or any other party encounter such materials on the job site, or should it in any other way become known that such materials are present or may be present on the job site or any adjacent or nearby areas which may affect Consultant's services, Consultant may, at its option, suspend or terminate work on the project until such time as Client retains a qualified contractor to abate and/or remove the asbestos and/or hazardous or toxic materials and warrant that the job site is free from any hazard which may result from the existence of such materials.

19. Site Conditions. Client agrees that in accordance with generally accepted construction practices, the construction contractor and construction subcontractors will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property, and that this requirement shall apply continuously and not be limited to normal working hours. Neither the professional activities of Consultant nor the presence of Consultant or his or her employees or subconsultants at a construction site shall relieve the contractor and its subcontractors of their obligations, duties and responsibilities including, but not limited to, construction means, methods, sequence, techniques or procedures necessary for performing, superintending or

coordinating all portions of the work of construction in accordance with the contract documents and applicable health or safety requirements of any regulatory agency or of state law.

20. Additional Services. Client agrees that if Client requests services not specified in the scope of services described in this Agreement, Client will pay for all such additional services as extra services, in accordance with Consultant's billing rates utilized for this Agreement, or as identified via an amendment to the original Agreement.

21. Enforceability. This Agreement shall be interpreted by the parties in a manner that ensures this Agreement's general accordance with applicable local, state, federal, or foreign laws. The parties affirm that this Agreement is a collaborative effort between Client and Consultant, with no single party considered the drafter of this Agreement or having the drafting of this document construed against them.

22. Entire Agreement. To the extent allowed by law, any agreement that is part of the scope of Consultant's Services and incorporated by reference into this Agreement shall be subordinated to the terms and conditions of this Agreement where they conflict. This Agreement shall be interpreted as though prepared by all parties and shall not be construed unfavorably against either party.