

**Tighe&Bond**

Erving, Massachusetts

## **Former International Paper Mill Subdivision Feasibility Study**

Submitted to

**Town of Erving &  
Franklin Regional Council of Governments**

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**Tighe&Bond**

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**SECTION 1**

# **Section 1**

## **Introduction**

### **1.1 Background**

The former Millers Falls International Paper Mill (IP Mill) complex is located on an approximately 49.3-acre parcel of land at 8 Papermill Road in Erving, Massachusetts, bordered by the Millers River to the south, Papermill Road to the west, Prospect Street and Mohawk Trail (Route 2) to the north, and a wooded hillside to the east that abuts the current landfill property.

The mill complex consists of a series of mostly interconnected buildings in eight distinct building footprints ranging from one to four stories. The complex was built to support the processes of manufacturing paper, and represents a series of phases of construction over the 97-year operational period of the mill. The core portion of the mill complex and the power house building were constructed in 1902; the power house building was later converted to a pump house. The main offices and front receiving docks were added to the original mill complex in 1966, and the rear stock house and loading docks were constructed in the 1990s. Paper mill operations began to see a reduction in production in the 1990s and the mill shut down in 2000. A real estate developer bought the property in 2005 but failed to find a suitable reuse or buyer for the property. The property is now under the control of the Town of Erving.

In 2015, Tighe & Bond and a consultant team comprised of Cecil Group architects and FXM market analysts, with assistance from the Franklin Regional Council of Governments (FRCOG), completed a feasibility study of redevelopment of the former IP Mill complex from a market, building, and infrastructure perspective. Discussions of the potential redevelopment process with stakeholders and potential developers held since the development of the original feasibility study identified interest in evaluating the potential for subdividing the property for light manufacturing industrial use.

This technical memo includes analysis of site constraints, permitting requirements, opinion of probable project costs for two conceptual subdivision alternatives for light industrial and commercial use, grant applications and funding sources, and discussion of the development potential of the eastern portion of the parcel. Appendix A to this memorandum contains plans showing the overall parcel, conceptual layouts for two redevelopment alternatives, and the eastern portion of the parcel.

### **1.2 Environmental Resources**

MassGIS data was used to identify site constraints, including wetland resources, floodplain limits, and areas identified by the Natural Heritage Endangered Species Program (NHESP) as Priority Habitat for Rare Species and Estimated Habitat for Rare Wildlife. On-site evaluation of conditions or wetland delineation was not performed as part of this study. The approximate limit of the various environmental resources associated with the parcel are shown on the attached concept drawings.

#### **1.2.1 NHESP Estimated & Priority Habitats of Rare Species**

The former IP Mill complex is surrounded by areas designated by NHESP as Priority Habitats of Rare Species and Estimated Habitats of Rare Wildlife. An information request was submitted to NHESP to determine the extent and type of state-listed protected species within the proposed project extent. NHESP responded in correspondence dated

December 14, 2016 (Appendix B). Based on that correspondence and the NHESP fact sheet for the species of concern, the Priority and Estimated Habitats and relevant rare species were identified on the parcel.

Priority Habitat PH 1337 and Estimated Habitat EH 76 surround, but exclude, the footprint of the former IP Mill complex. The Wood Turtle (*Glyptemys insculpta*), a state-listed Species of Special Concern, has been identified within this mapped habitat area. Project work should provide consideration for the timing of work performed during inactive periods of the year for this species as well as provide an implementation of a turtle protection plan, including monitoring/sweeps, to ensure minimal impacts during the construction phase at this location.

### **1.2.2 Wetland Resource Areas**

Areas subject to protection and jurisdiction under the Massachusetts Wetlands Protection Act (MAWPA; M.G.L. c. 131 § 40) at and in close proximity to the subject site likely include the following:

#### **1.2.2.1 Inland Bank**

Inland Bank associated with the Millers River is situated along the south boundary of the subject parcel. Bank is the portion of land that normally abuts and confines a body of water, and may be partially or totally vegetated, or comprised of exposed soil, gravel, or stone.

#### **1.2.2.2 Bordering Vegetated Wetland**

Bordering Vegetated Wetlands (BVW) may be present along the Millers River above the top of inland Bank. BVW typically consists of areas where 50 percent or more of the vegetational community is comprised of wetland indicator plants and/or evidence of prolonged inundation or saturation is observed.

#### **1.2.2.3 Land Under Water Bodies and Waterways**

Land Under Water Bodies and Waterways (LUWW) associated with the Millers River is present in close proximity to the subject site. LUWW may be composed of organic muck or peat, fine sediments, rocks and/or bedrock.

#### **1.2.2.4 Bordering Land Subject to Flooding**

Based on the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP) Flood Insurance Study (FIS; community number 250116, effective July 5, 1982)) and the Flood Insurance Rate Map (FIRM) for the Town of Erving (map panel 2501160012B, effective date July 5, 1982), the limit of flooding from the Millers River associated with the 100-year design storm event along the project site ranges in elevation from approximately 238 feet to approximately 252 feet.

#### **1.2.2.5 Riverfront Area**

The 200-foot Riverfront Area of the Millers River has been approximated based on the presumed Mean Annual High Water (MAHW) line of the river. The "Inner Riparian Zone" is also shown on the concepts. The Riverfront Area is considered a wetland resource area, and is the area of land between the MAHW line measured horizontally outward from the river and a parallel line located 200 feet away. At the subject site, portions of the Riverfront Area consist of previously developed and/or degraded land.

### 1.3 Site Features

To the north, the parcel is characterized by a steep embankment up to the French King Highway (Route 2) with shallow depth to bedrock. To the south, the parcel is bounded by a relatively steep slope down to the Millers River. Paper Mill Road borders the parcel to the west, taking a sharp curve up a hill to intersect with Prospect Street. East of the previously developed area, a utility easement oriented northeast-southwest crosses the parcel. Based on the steep slopes to the north and south, the area currently defined by the mill complex has maximized the buildable area on the former IP Mill parcel.

### 1.4 Zoning Districts

According to the "Official Zoning Map, Erving, Massachusetts" dated June 6, 2005, the currently developed portion of the former IP Mill parcel is within the Central Village (CV) Zoning District, and the eastern portion of the parcel is within the Rural Residential (RR) Zoning District. Per the Town of Erving Zoning Bylaw, Section 4 Use Regulations, subsection 4.2 Use Regulations Schedule, no Industrial Uses are permitted by-right in the RR Zoning District, and the only Industrial Use that may be permitted by special permit is a sawmill.

### 1.5 Redevelopment Concepts

Tighe & Bond evaluated two concepts for reuse of the former IP Mill site and the development potential of the eastern portion of the property. Development of the two conceptual alternatives was based on desktop analysis of existing plans, information available from the prior feasibility study, MassGIS data, relevant regulations, and discussions with the Town and FRCOG. Both conceptual alternatives include substantial demolition of existing buildings, new building construction, addition of an access road along the southern boundary of the original parcel, and subdivision into developable lots usable for light industrial manufacturing. The concept plans can be found in Appendix A.

- Concept 1 – Building 2 & 8 Redevelopment – the first scenario evaluated balancing the preservation of two mill buildings determined in the previous feasibility study to have the most historical significance and highest potential for reuse with the addition of a new light manufacturing building. This alternative consists of a three lot subdivision created through demolition of most of the existing mill buildings leaving buildings 2 and 8 for redevelopment, and construction of a new 22,000 square foot light industrial building.
- Concept 2 – Mill Complex Demolition with New Development – the second scenario evaluated maximizes the light industrial potential of the parcel through demolition of all existing mill buildings, subdivision into three developable lots, and construction of a total of 38,000 square feet of new buildings.

Tighe & Bond also performed a desktop study of the feasibility to develop the currently undeveloped eastern portion of the parcel, using data from MassGIS and FRCOG evaluating access, potential resource areas, and site conditions and constraints. This is further discussed in Section 2.3

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## **SECTION 2**



## **Section 2**

# **Conceptual Redevelopment Layouts**

The prior Former International Paper Mill Feasibility Study, completed in December 2015, concluded that because of the configuration of the different building segments and the condition overall of the complex, redevelopment will be a challenge. The newer buildings in the complex were constructed with a more utilitarian design than the more historic portions of the mill complex, and have limited architectural value. Both older and newer portions of the mill complex have suffered from a lack of maintenance and from vandalism, and there are substantial egress, access, and structural concerns for several of the buildings.

Accordingly, the two conceptual redevelopment alternatives include substantial mill complex demolition, and construction of new buildings within the overall mill complex footprint. Based on discussions with the Town and FRCOG, use of the proposed redevelopment has been presumed to be predominantly light industrial, with the potential for a mix of residential, commercial, and industrial use presented in Concept 1, and light manufacturing use presented in Concept 2. The configuration of the concepts are based on Town of Erving Zoning Bylaw and Subdivision of Land Rules & Regulations requirements and the physical site constraints of the parcel.

Based on physical site constraints, including the steep slope and shallow bedrock on the northern boundary of the site and the Millers River on the southern boundary, the access road for the two Alternatives is proposed to be 24-foot wide, with a 28-foot right-of-way in Concept 1 (permissible for a Small Project Subdivision with a Planning Board waiver) and a 40-foot right-of-way in Concept 2 (permissible by-right for a Minor road). The road width is proposed to exceed Town of Erving minimum road requirements for Minor roads in order to increase safety for tractor trailer traffic.

### **2.1 Concept 1: Building 2 & 8 Redevelopment with Mill Complex Demolition, New Development, & Site Subdivision**

The first scenario explored includes retention and renovation of buildings 2 and 8, which were determined in the prior feasibility study to have the highest potential for historic value and reuse, demolition of the remaining mill complex buildings, and construction of a new building and access road as part of a mixed use subdivision.

The architectural evaluation of Building 2 in the prior feasibility study described it as the most historic, well-proportioned and re-usable portion of the entire mill complex. The building was a part of the original 1902 mill construction, and is currently five stories in height with ample ceiling height and abundant natural light from frequent and well-proportioned exterior windows. As in the prior feasibility study, the height on the second floor was presumed to be inadequate and the concept assumes the conversion of this building to a four-story structure.

Building 8, also known as the pump house, is a stand-alone brick structure located near the Millers River. As described in the prior feasibility study, building 8 appears to be in reasonable condition, and provides interesting redevelopment potential owing to its location and potential historical value.

Concept 1 consists of demolition of the majority of the existing mill complex buildings, retaining buildings 2 and 8, creating a new access road along the southern boundary of the property, and subdividing the parcel into the following lots from west to east:

- Lot 1, approximately 4.04 acres. Lot 1 is proposed to consist of a retrofitted building 2, with floor 1 as a commercial business, and floors 2 through 4 proposed as 24 residential units. The parking area for building 2 is designed for providing 1 space per 350 square foot of commercial use (38 spaces) and 2 spaces per residential unit (48 spaces). If building 2 were reconfigured for all commercial use, the parking requirements would decrease, the parking area reconfigured to improve truck access, and a loading dock could be added to building 2.
- Lot 2, approximately 2.70 acres. A new, 22,000 sf light industrial building with a loading dock and 24 space parking area (minimum 1 space per 1,000 square feet) are proposed for Lot 2. The building size was maximized based on the existing limits of pavement, Town of Erving zoning setback requirements, parking area requirements, and the access road location.
- Lot 3, approximately 42.56 acres. Lot 3 is proposed to include building 8, renovated to a restaurant, a parking area, and the remainder of the property, including the currently undeveloped eastern portion of the lot. The parking area, which would be located outside of the existing mill area footprint and within areas identified as NHESP Priority and Estimated Habitat, could serve both as restaurant parking and recreational access to the eastern portion of lot.

## 2.2 Concept 2: Mill Complex Demolition with Site Subdivision and New Development

The second concept evaluated involves new development within the approximate previous mill complex footprint to create a four lot light industrial/manufacturing subdivision. Per discussions with the Town of Erving, the size of the light manufacturing building on Lot 1 was maximized.

Concept 2 consists of demolition of all existing mill complex buildings, creation of a new access road along the southern boundary of the property and access along the northern boundary of the property, construction of 38,000 square feet of new light manufacturing buildings, and subdivision into the following lots from west to east:

- Lot 1, approximately 4.73 acres. Lot 1 is proposed to include a 30,000 square feet light manufacturing building with a loading dock area and a 37 space parking area (minimum 1 space per 1,000 square foot). The parking area is proposed to be accessed from the new Minor road to the south, and also via a one-way access road to the north. In order for tractor trailers to be able to access the loading dock, a shared access agreement between Lots 1 & 2 will be required.
- Lot 2, approximately 2.10 acres. Based on physical site constraints, the proposed access roads, and maximizing the building area on Lot 1, the new light manufacturing building is proposed to be 6,500 square feet, with a 12 space parking area (minimum 1 space per 1,000 square feet) and a loading dock. As described for Lot 1, a shared access easement arrangement with Lot 1 will be required to provide safe tractor trailer access to the Lot 2 building loading dock and to allow tractor trailer traffic from Lot 2 to exit the property onto Papermill Road. Both Lots 1 and 2 are proposed to be within the limits of existing pavement, and outside of the mapped limits of NHESP Priority and Estimated Habitat.

- Lot 3, approximately 1.76 acres. Lot 3 is proposed to have a 1,500 square feet light manufacturing building and a 15 space parking area. Most of Lot 3 would be outside of the existing limits of pavement, and within the mapped limits of NHESP Priority and Estimated Habitat. As in Concept 1, the Lot 3 parking area could be used to access remaining land for recreational purposes. Unlike Concept 1, the eastern undeveloped portion of the existing parcel is not included in Lot 3, and is instead proposed as "remaining land".
- Remaining Land approximately 40.71 acres, comprised of the eastern, undeveloped portion of the property and a narrow strip of land south of the proposed access road. In this concept, the remaining land is proposed to not be included within the light industrial subdivision.

## 2.3 Development Potential of Eastern Portion of Parcel

East of the IP Mill complex site, the remaining parcel which extends to the boundary with the Erving landfill is currently undeveloped and has an area of approximately 38 acres. Tighe & Bond assessed the potential for this parcel to be developed. The assessment of the east portion of the parcel is based on a GIS map provided by FRCOG, the requirements of the Erving Zoning Bylaw and Subdivision Rules & Regulations, other regulations and site constraints. A plan showing the parcel can be found in Appendix A.

### 2.3.1 Site Considerations

The eastern portion of the lot is long and relatively narrow, with a minimum width of 65 feet and a maximum width of 535 feet. The eastern area is bounded by the French King Highway (Route 2) to the north, the Millers River to the south, a northeast-southwest oriented utility easement to the west, and the former Erving Paper Sludge Landfill to the east. The majority of the eastern area appears to have steep slopes, with an approximately 3.1 acre area of flat area of land in the center of the eastern area, within the Millers River Riverfront Area. The eastern area is bisected by stream or drainage gullies that drain downslope to the Millers River from the French King Highway.

### 2.3.2 Resource Areas

The eastern portion of the subject site is situated entirely within the limits of NHESP mapped Priority Habitats of Rare Species & Estimated Habitats of Rare Wildlife of the Wood Turtle. Much of the area also falls within the 200-foot Riverfront Area of the Millers River. MassGIS MassDEP wetlands and hydrology data has been included in the review. Wetlands are mapped adjacent to the limits of the former Erving Paper Sludge Landfill, and additional streams are shown within the lot. For the purposes of this evaluation, we have assumed that the wetlands and streams as mapped by MassGIS are accurate and subject to local, state, and federal jurisdiction, including the MAWPA 100-foot Buffer Zone associated with each.

### 2.3.3 Access

Potential routes to gain access to the central part of the east parcel would be from the west existing developed portion of the parcel, or from the east through the former Erving Paper Sludge Landfill. Access directly from French King Highway does not appear to be feasible given the steep slopes and shallow bedrock.

Access from the landfill to the west would have the advantage of potentially being able to utilize existing construction roadways within the landfill, and would be the closest to the central flat portion of the parcel; however, MassGIS shows mapped wetlands in the

area of the property line between the landfill and the central eastern portion of the former mill parcel, and access between them may require a stream crossing and impacts to wetland resources. Grades are steep in this area making installation of roads for vehicular travel challenging. New stream crossings are required to meet the Massachusetts River and Stream Crossing Standards.

Similarly, there appear to be several potential streams and/or drainage gullies between the currently developed portion of the former IP Mill parcel and the eastern central area of the parcel. A new access road would require significant grading impacts due to steep slopes and require stream crossings, which would impact wetland resources. The road would be steep in some locations for vehicular travel and would be of significant distance to reach the flat portion of the parcel.

#### **2.3.4 Zoning**

The eastern portion of the former IP Mill parcel is currently within the Rural Residential Zoning District, within which the only Industrial Use that may be permitted by special permit is a sawmill. A change in zoning would therefore be required in order to proceed with development of the eastern area for light industrial or manufacturing use. Per the Town of Erving Zoning Bylaws, Section 3.4.5 Changing Zoning Map, any change of the Zoning Map shall constitute an amendment to the Bylaw and shall conform to the requirements for amending this Bylaw as described in M.G.L. Chapter 40A.

#### **2.3.5 Summary**

Based on the physical characteristics of the eastern portion of the former IP Mill parcel, present zoning, and resource area considerations, the feasibility of developing the eastern portion is limited. In general the steep slopes, shallow bedrock, and possible presence of environmental resource areas limit the usable flat area in the middle of the east area, and creating access to the usable area would be challenging.

Recreational use of the eastern portion, such as walking trails connecting from the developed portion of the site or an overlook of the Millers River, is a more feasible alternative. Unpaved pedestrian trails less than three feet wide for public access on conservation land may be permitted as "exempt minor activities" in both the 100-foot Buffer Zone and Riverfront Area provided the activities do not destabilize the site to the extent that the work results in direct impacts to jurisdictional areas.

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## **SECTION 3**



## **Section 3**

# **Potential Permitting Requirements**

### **3.1 Environmental Permitting**

#### **3.1.1 Massachusetts Environmental Policy Act (MEPA) Environmental Notification Form (ENF)**

The Massachusetts Environmental Policy Act (MEPA) is administered by the Massachusetts Executive Office of Energy & Environmental Affairs (EEA). MEPA review is required for projects that require a state agency action (i.e. permit, financial assistance, or land transfer) and that meet a threshold at 301 CMR 11.03. The MEPA review process features two levels of review. Smaller projects are required to submit an Environmental Notification Form (ENF), with the presumption that no further review will be required unless at the discretion of the Secretary of EEA. Larger, more impactful projects undergo a multi-part review including an ENF, and Draft and Final Environmental Impact Report (EIR).

Based on the nature of the proposed project, it is assumed that state agency funding or another state agency action will be required, and that an ENF may be required based on one or more of the following review thresholds:

- Wetlands, Waterways, and Tidelands, alteration of 500 or more linear feet of bank along an inland bank and/or alteration of ½ or more acres of any other wetlands (e.g., BLSF, Riverfront Area);
- Land, if the project will result in the direct alteration of 25 or more acres of land and/or creation of 5 or more acres of impervious area.

The ENF will also serve as notification to the Massachusetts Historical Commission (MHC) in accordance with Massachusetts General Laws Chapter 9, sections 26-27C.

#### **3.1.2 Massachusetts Wetlands Protection Act (MAWPA) Notice of Intent (NOI)**

As both alternative concepts include proposed work within jurisdictional resource areas and the 100-foot Buffer Zone, filing of a Notice of Intent (NOI) in accordance with the Massachusetts Wetlands Protection Act (MAWPA) is likely required. Within Riverfront Area, regulatory considerations exist for work within the footprint of an Historic Mill Complex and/or within previously developed or degraded Riverfront Areas.

In addition to meeting wetland resource area performance standards, the MAWPA incorporates the Massachusetts Stormwater Management Standards in its implementing regulations (310 CMR 10.00). New and redevelopment projects are subject to compliance with these standards as part of the NOI process. As current stormwater drainage outfalls are likely in a deteriorated condition, design of new drainage outfalls is probable for both alternative concepts, and will need to comply with the Massachusetts Stormwater Management Standards. Low impact development (LID) measures will be used to minimize impacts to the maximum extent possible.

### **3.1.3 Massachusetts Endangered Species Act (MESA) Review**

According to MassGIS mapping, the area surrounding the former IP Mill complex is within areas designated by NHESP as Priority Habitats of Rare Species and Estimated Habitats of Rare Wildlife. If a project falls within Priority Habitat of Rare Species, proponents must file with NHESP for review under the Massachusetts Endangered Species Act (MESA). As described in Section 1.2.1, Priority Habitat Area PH1337 and Estimated Habitat EH 76 for the Wood Turtle surround, but exclude, the former IP Mill complex area.

Under MESA, the NHESP will provide a determination letter stating whether or not a project or activity, as currently proposed, will result in a "Take" of state-listed species. A small percentage of projects will impact state-listed species or their habitats and must either be revised to avoid such a "Take" or must meet the performance standards for the issuance of a Conservation and Management Permit (CMP). Based on the proposed development of the mill site, a Take is not anticipated at this time.

### **3.1.4 Massachusetts Department of Environmental Protection (MassDEP) 401 Water Quality Certification**

A Section 401 Water Quality Certification is triggered by the filing of a federal permit if the project results in a loss of 5,000 square feet cumulatively of bordering or isolated vegetated wetlands and land under water, the amount of any proposed dredging is greater than 100 cubic yards, or if any of the other thresholds listed in 314 CMR 9.04 are met. If the project will result in the loss of 5,000 square feet of bordering vegetated wetlands, a 401 Water Quality Certification will need to be submitted to the MassDEP for review and approval, but is not anticipated at this time based on proposed project impacts.

### **3.1.5 MassDEP Chapter 91 License**

Any projects located in, on, over, or under any non-tidal, navigable river or stream on which public funds have been expended either upstream or downstream within the river basin, except for any portions not normally navigable during any season by any vessel requires Chapter 91 authorization. If project work, such as filling or removal of materials, is expected to occur below the high water mark for the Millers River, a Chapter 91 license or permit may be required, but is not anticipated at this time.

### **3.1.6 US Army Corps of Engineers Clean Water Act Section 404, Massachusetts General Permits Authorization**

The federal Clean Water Act (CWA) Section 404 regulates the discharge of dredge or fill material into wetlands and Waters of the United States. Waters include wetlands and tributaries to Navigable Waters. Section 404 is administered by the United States Army Corps of Engineers (Corps), which has issued for General Permits for activities subject to Corps jurisdiction in Waters of the United States within the boundaries of, and off the coast of, the Commonwealth of Massachusetts. Based on the potential need to provide drainage discharge to the Millers River as part of stormwater drainage improvements, permit authorization from the Army Corps may be required.

### **3.1.7 US Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) Notice of Intent (NOI) and Stormwater Pollution Prevention Plan (SWPPP)**

Construction activities that result in the disturbance of one or more acres of land are required to obtain coverage under the NPDES Construction General Permit (CGP). Prior to construction, a Notice of Intent (NOI) must be submitted to the Environmental Protection Agency (EPA). Coverage under the CGP requires that a Stormwater Pollution Prevention Plan (SWPPP) be developed for the project.

## **3.2 Land Use & Existing Building Requirements**

A summary of the possible Massachusetts Contingency Plan, building demolition, and hazardous building material requirements associated with the proposed light industrial subdivision alternative concepts was based on the prior feasibility study and the Former International Paper Mill Analysis of Brownsfields Cleanup Alternatives (ABCA) Draft Report submitted to the Town of Erving by Tighe & Bond in October 2016. A review of the historic, zoning and planning requirements were also evaluated.

### **3.2.1 Massachusetts Contingency Plan (MCP) / EPA Brownfields**

Between 2010 and 2015, Phase I and II Environmental Site Assessments and a Pre-Demolition Hazardous Building Materials Assessment (HBMA, August 2015) were conducted of the mill site. Those investigations were funded using Franklin Regional Council of Governments (FRCOG) Environmental Protection Agency (EPA) Brownfields Assessment grants. Summary conclusions include:

- There have been a number of historic releases at the site.
- The eastern edge of the site is immediately downgradient of the Erving Landfill.
- A number of potential Recognized Environmental Conditions exist.
- Asbestos containing materials were observed within the existing mill buildings.

The ABCA report concluded that, as several Response Action Outcomes have already been submitted to MassDEP for evaluation and remediation of oil/hazardous materials on-site, MCP 310 CMR 40.0000 is not applicable for the recommended ABCA alternative of complete abatement.

### **3.2.2 Building Demolition & Hazardous Materials**

The recommended alternative from the ABCA Report was complete abatement of presumed asbestos-containing materials (PACM) and hazardous materials that were identified as part of the assessment in preparation for building demolition. The abatement should be performed in conformance the following regulations:

- OSHA 29 CFR Parts 1926
- Standards Applicable to Generators of Hazardous Waste, 49 CFR Part 362, Subpart C, §262.30, §262.31 and §262.32
- Resource Conservation and Recovery Act and regulations
- 310 CMR 7.09, MassDEP Notification Prior to Demolition,
- 310 CMR 7.00 and 7.15, MassDEP Air Control Regulation, & 453 CMR 6.00, Department of Labor Standards (DLS) Asbestos Abatement Notification

### 3.2.3 Massachusetts Historical Commission (MHC) Coordination

Coordination with state (Massachusetts Historical Commission and Board of Underwater Archaeological Resources) and tribal historic preservation officers will be required per Section 106 of the National Historic Preservation Act and Massachusetts General Laws Chapter 9, sections 26-27C. The state and tribal historic preservation officers will either determine that the proposed activities will not adversely affect historic and/or cultural resources or they will request additional information and, possibly, archaeological surveys within undisturbed or undeveloped areas.

Based on a review of the Massachusetts Cultural Resource Information System (MACRIS), none of the existing buildings within the former International Paper Mill complex are listed in the State Register of Historic Places. The age of mill buildings 2 and 8 indicate that they may be eligible for historic listing, and the Town may wish to investigate further, particularly as it may relate to tax credits.

### 3.2.4 Town of Erving Subdivision Rules & Regulations

Although the configuration of the proposed lots in both Alternative Concepts is unusual, the lot sizes, frontage amounts, and setback amounts do appear to meet the Town of Erving Subdivision Rules and Regulations.

As both Alternative concepts include subdivision of the existing former IP Mill parcel, the Town of Erving Subdivision Rules & Regulations will apply to both as follows:

- Preliminary Plan of Subdivision – will be required under the Regulations, and requires meetings with Town Departments prior to submission.
- Definitive Plan of Subdivision – will be required under the Regulations, and must be prepared by Registered P.E. or Land Surveyor. Although some level of property survey was completed by the prior owner, an additional property line survey may be necessary in order to subdivide the parcel.
- Small Projects Procedures Section IV, page 12 – as both concepts include a 4 or fewer lot subdivision, the Small Projects Procedures may be applicable. The Small Projects Procedures allow for the Planning Board to allow a reduction of the right-of-way width on Minor Streets to 28 feet through a waiver, which Alternative Concept 1 would require.

### 3.2.5 Town of Erving Zoning Bylaw

Per the "Official Zoning Map, Erving, Massachusetts" dated June 6, 2005, the former IP Mill complex is located within the Central Village (CV) Zoning District. The Town of Erving Zoning Bylaw Section 4.2, Use Regulations Schedule defines uses permitted by right for the CV Zoning District and those permitted after a Special Permit is granted by the Planning Board. Industrial uses such as manufacturing and processing are not permitted by right in the CV Zoning District. As both concepts propose light industrial/manufacturing uses, both Alternative Concept 1 and Alternative Concept 2 will require approval via submission of a Special Permit application to the Planning Board.

The Town of Erving Zoning Bylaw Section 6, Site Plan Review, subsection 6.2.2 Applicability, states that a Site Plan Review shall be required for the creation of four (4) or more lots; or when a non-residential development on a single lot or contiguous lots under common ownership will create more than 5,000 square feet of enclosed floor area, or will have 10 or more parking spaces or 2,000 square feet or greater of parking area.

As both Alternative Concept 1 and Alternative Concept 2 layouts propose 10 or more parking spaces, Site Plan Review is expected to be required for either Alternative.

**Tighe&Bond**

## **SECTION 4**



## **Section 4**

# **Opinion of Probable Project Costs**

Conceptual opinion of probable project costs (OPPC) were developed as part of the initial feasibility study; the same information was used to develop OPPC for the subdivision concepts. For each concept, the estimates include costs for building reuse, structural improvement, hazardous building material abatement, demolition, new building construction, infrastructure and site improvement. The breakdown of these costs can be found in Table 4.1 with backup data provided in Appendix C. The table also includes a contingency, general conditions, insurance, bonds, permits and architectural and engineering allowances. Section 5 contains information relevant to pursuit of funding for demolition, HBM abatement and redevelopment and development costs.

### **4.1 Existing Building Renovation**

The construction costs needed to support the reuse of the mill complex has been calculated for both a residential reuse and a commercial reuse.

The conceptual construction cost estimate for residential reuse includes exterior/interior renovation work, new vertical circulation (stairs and elevator), fire protection, plumbing, HVAC and electrical allowances. The conceptual cost for residential fit-out is about \$150 per square foot.

The conceptual construction cost estimate for commercial reuse includes exterior/interior renovation work, new vertical circulation (stairs and elevator), fire protection, plumbing, HVAC and electrical allowances. The conceptual cost for commercial fit-out is about \$128 per square foot. Commercial space, which is modified to provide individual office space, will increase the square foot cost, comparable to residential construction.

### **4.2 New Building Construction**

The conceptual construction cost estimate for construction of new buildings for light industrial/manufacturing use includes warehouse space and office space. The conceptual cost for warehouse fit-out is about \$83 per square foot, and the conceptual cost for office space fit-out is about \$100 per square foot. These costs include building shell, foundation, loading dock with overhead door, and an epoxy coated floor in the warehouse space. In both concepts it is assumed that approximately 20% of the gross square footage of each building will be office space.

### **4.3 Structural Improvements**

Because of the current overall fair condition of existing mill buildings 2 and 8, repairs will be required as part of concept 1. During the evaluation of the buildings, areas of structural concern were generally identified and these observations were used to quantify the extent of repairs and estimated costs. A range of unit costs from \$5 to \$50 per square foot for structural repairs was used to develop the conceptual opinion of cost estimates.

## **4.4 Existing Building Demolition**

A unit price of \$3 to \$10 per square foot was used to estimate the demolition cost depending on the type and condition of the mill building. Assuming demolition of the entire complex, site activities would include hazardous building material abatement, building demolition and restoration of the site assuming fill, loam and seed within the building footprint.

## **4.5 Infrastructure**

Estimates for the installation of potable water and hydrants on site as well as required wastewater infrastructure including gravity sewer pipe, sewer manholes and pump station were developed based on the degree of development proposed for the two concepts. The cost analysis assumed that the water would enter the project site at a single location and consist of a single 8-inch diameter pipe. Individual services for each building would be tapped off of this single header. It has been assumed wastewater will be collected within each building and discharged to a gravity sewer main that runs from east to west along the north of the existing buildings at the toe of the existing slope, with manholes installed every 300 linear feet at a maximum. This would require an easement across the subdivided parcels.

The pump station and force main would be installed in Papermill Road, and the main would have a continuous slope up the hill to an existing sewer manhole in East Prospect Street. Estimated opinions of probable construction cost for drainage and stormwater management systems are included within the site work described in Section 4.6. Other utilities including electrical, telephone/communications/data and gas were not evaluated as part of this study. Electric is available within the site and it is reported that telephone/communications/ data is readily available. There is no natural gas utility within Erving.

## **4.6 Traffic Access Circulation & Parking**

Each of the proposed redevelopment concepts resulted in different site improvements. Costs developed for the concepts included the reconstruction of pavement, cement concrete walks and curbing, lawn/landscape improvements, trees, drain piping and manholes, stormwater treatment/detention and parking lot lighting.

Conceptual probable costs were developed for each concept. The costs also assume minimal changes in grade. The OPCC also assumes existing pavement or buildings where new pavement is not proposed will be restored to lawn. Costs for utility work including drainage and lighting are included in the infrastructure evaluation.

## **4.7 Hazardous Building Material Abatement**

The abatement of asbestos and other hazardous building materials within the building have been identified in reports completed under a separate contract (Pre-Demolition Hazardous Building Materials Assessment Report, August 2015 and Analysis of Brownfields Cleanup Alternatives Draft Report, October 2016). Conceptual opinions of probable costs were extracted from these reports.

## 4.8 Summary of Project Costs

Table 4.1 below has been developed based on the costs, including the hazardous building material abatement, structural improvements, demolition required, building improvements, and new building construction. The table also includes the costs developed associated with the site and infrastructure improvements. The table includes a contingency, general conditions, insurance, bonds, permits, and architectural and engineering allowances.

**TABLE 4-1**

Project Summary and OPCC Redevelopment Alternatives

	Concept 1	Concept 2
<b>Building Complex Information</b>		
Existing Building Units Redevelop	2 & 8	NA
Square Foot New Building Commercial Construction (sf)	22,000	38,000
Square Foot Residential Redevelopment Area (sf)	39,000	NA
Building 2: 13,000 sf (Three floors)		
Square Foot Commercial Redevelopment Area (sf)	14,400	NA
Building 2: 13,000 sf (First floor)		
Building 8: 1,400 sf		
Square Foot Demolition Area (sf)	156,335	210,575
<b>Total Development Building Footprint Area (sf)</b>	<b>36,400</b>	<b>38,000</b>
<b>Total Development Building Gross Area (sf)</b>	<b>75,400</b>	<b>38,000</b>
<b>Conceptual Opinion of Probable Construction Costs</b>		
New Building Construction Costs	\$1,888,000	\$3,284,000
Residential Building Improvement Costs	\$5,838,000	NA
Commercial Building Improvements Costs	\$1,846,000	NA
Structural Repair Costs	\$1,390,000	NA
Demolition Costs	\$820,000	\$1,142,000
Infrastructure Costs - Water & Sewer	\$437,000	\$442,000
Site Work Costs	\$1,129,000	\$1,360,000
Hazardous Building Material Abatement	\$79,000	\$200,000
<b>Subtotal OPCC</b>	<b>\$13,427,000</b>	<b>\$6,428,000</b>
<i>Concept Unit Price (Cost/Gross Area (sf))</i>	<i>\$178.08</i>	<i>\$169.16</i>
<b>Allowances</b>		
Contingency (20% )	\$2,686,000	\$1,286,000
General Conditions (10% )	\$1,343,000	\$643,000
Insurance (1.10%)	\$148,000	\$71,000
Bonds (0.8%)	\$108,000	\$52,000
Environmental Permit (1.5%)	\$202,000	\$97,000
Architect and Engineering Fees (7%)	\$940,000	\$450,000
<b>Subtotal Allowances</b>	<b>\$5,427,000</b>	<b>\$2,599,000</b>
<b>Total OPCC &amp; Allowances</b>	<b>\$18,854,000</b>	<b>\$9,027,000</b>

**Tighe&Bond**

## **SECTION 5**

## **Section 5**

# **Grant Applications & Other Funding Sources**

Undertaking the redevelopment of mill properties in Western MA is a very large undertaking by the communities who have abandoned properties within their borders. To successfully redevelop the mill parcel, funding programs and public-private partnerships are critical. There are a variety of state and federal programs to assist with financing projects such as proposed at the former mill site, for cleanup, demolition, and infrastructure, in support of financing construction or improvement costs. Tighe & Bond recommends a discussion between the Town of Erving, FRCOG, and MassDevelopment regarding assessing financing and the potential for private investment and partnerships to redevelop the former IP Mill property.

Please refer to Section 8.10 of the prior Former International Paper Mill Feasibility Study, completed in December 2015, for a summary of state economic development entities that provide technical assistance and funding to municipalities as well as financing incentives to developers.

FRCOG also completed an "Overview of Property Development-Related Tax Credit Programs" that summarizes the various programs available to finance redevelopment projects, and this is contained in Appendix D. The Overview contains summaries and information on property development-related tax credit programs listed below to assist with the financing of property development or redevelopment:

- New Market Tax Credits
- Historic Rehabilitation Tax Credits
- Brownfields Tax Credits
- Economic Development Improvement Program
- Low Income Housing Tax Credit Program

These programs should be reviewed in further detail by the Town, with FRCOG and MassDevelopment to determine what programs may be applicable to assist with financing the redevelopment of the mill site. These discussions should consider current concepts being proposed and what other redevelopment, improvement approaches may be beneficial to maximize financing and the return on investment.



**Tighe&Bond**

## **SECTION 6**

## **Section 6**

# **Summary of Subdivision Feasibility**

The two redevelopment concepts were based on discussions with the Town and FRCOG, desktop analysis of existing data, information available from the prior feasibility study, MassGIS data, and relevant regulations. Both concepts include substantial demolition of existing buildings, addition of an access road along the southern boundary of the original parcel, and subdivision into developable lots usable for light industrial manufacturing.

Concept 1, renovation of existing mill buildings 2 and 8, construction of 22,000 square feet of light industrial building, addition of an access road, and site subdivision, presents an alternative that allows for a mixed use (residential, commercial, and industrial) redevelopment of the site that preserves some of the history of the former International Paper Mill. Retention of the existing buildings provides aesthetic and historical value to the redevelopment concept, and if the buildings are eligible for listing in the National Register of Historic Places, renovation of these buildings may qualify for Massachusetts Historic Rehabilitation Tax Credit Program administered by the Massachusetts Historical Commission.

Even with the expense to renovate the existing mill buildings, the project costs based on the gross building square foot area is very comparable to new construction. Removal of residential use from the building 2 concept, and consideration solely of commercial use, would lower redevelopment costs, parking requirements, and would allow for reconfiguration for truck loading and access.

The hard costs (estimated without including allowances) within the conceptual opinion of probable construction costs for Concept 1 include \$9,572,000 for new building construction, residential building improvements, and commercial building improvements, and \$3,855,000 for “site-ready” work costs (structural repair, demolition, infrastructure, site work, and hazardous materials abatement costs).

Concept 2, demolition of all existing mill buildings, construction of three new light industrial buildings totaling 38,000 square feet, addition of access roads, and site subdivision, presents an alternative that allows for the most design flexibility for interested parties. In this concept, none of the historical value of the existing mill complex will be preserved, but because all buildings will be new construction, there will be no associated improvement or structural repair construction costs.

The hard costs (estimated without including allowances) within the conceptual opinion of probable construction costs for Concept 2 include \$3,284,000 for new building construction and commercial building improvements and \$3,144,000 for “site-ready” work costs (structural repair, demolition, infrastructure, site work, and hazardous materials abatement costs).

Both redevelopment concepts presented will require local, state, and federal permitting. As both concepts require subdivision, existing building demolition, and construction of new buildings and infrastructure, there are not significant differences in permitting requirements between the redevelopment concepts. Permits likely to be required for either concept include:

Regulatory Agency	Permit / Authorization
Erving Conservation Commission	Wetlands Protection Act Order of Conditions
Erving Planning Board & ZBA	Special Permit & Site Plan Review Preliminary & Definitive Subdivision Plans,
MassDEP & DLS	Demolition & Asbestos abatement Notifications
MHC	Historic Preservation Act Coordination
NHESP	Massachusetts Endangered Species Act Review
MEPA	EENF and EIR waiver request/Secretary's Certificate
US Army Corps	Section 404 General Permit Authorization
US EPA	NPDES CGP NOI & SWPPP

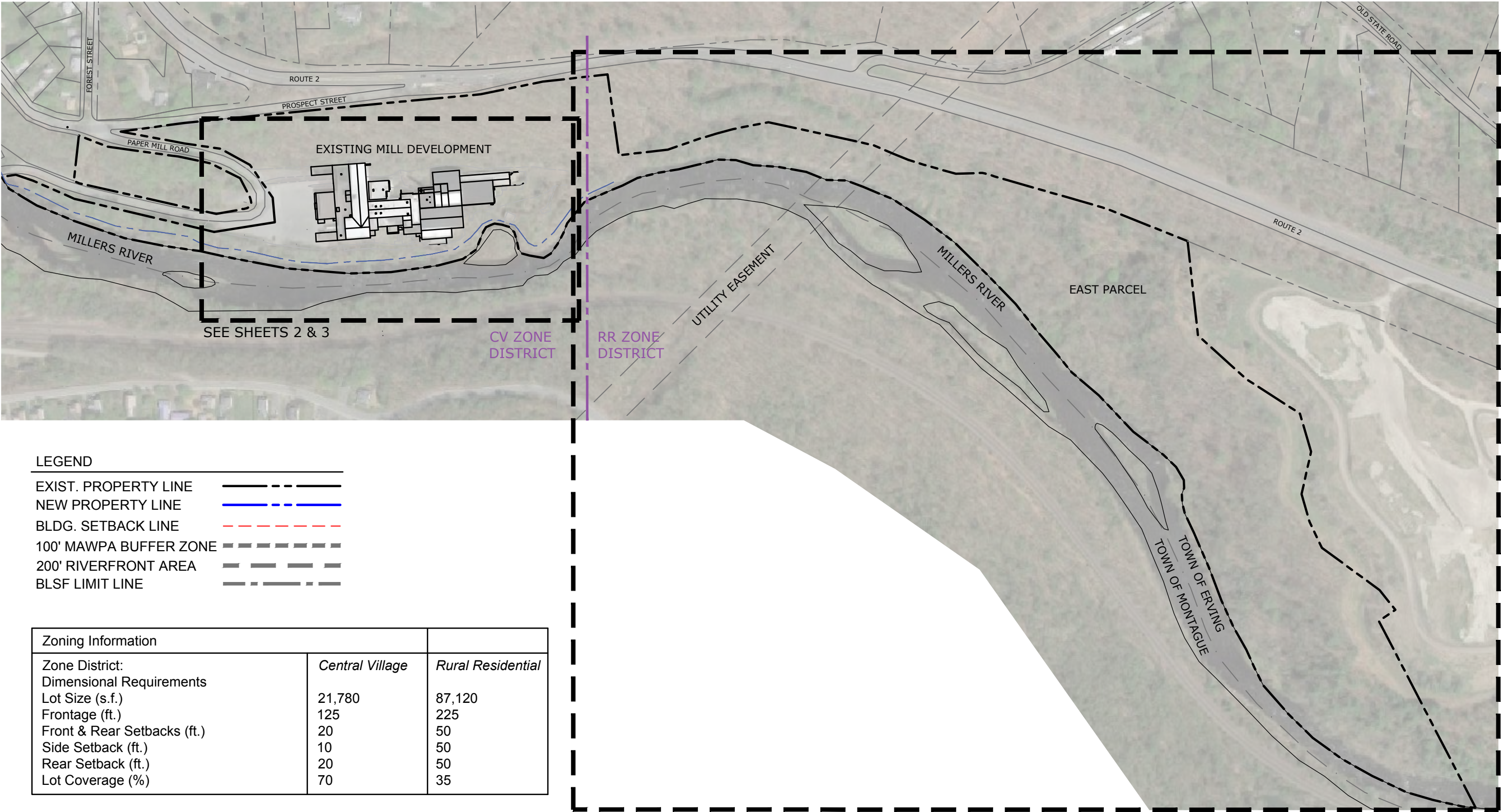
The most significant difference between the two concepts is the total developed building square feet. In concept 1, the total developed building area is 75,400 square feet with building footprints of 36,400 square feet, while in concept 2, the total developed building area is 38,000 square feet with building footprints of 38,000 square feet. The cost of construction based on gross developed building area is \$178.08 per square foot for Concept 1 and \$169.16 per square foot for Concept 2.

Concept 1 has approximately double the developed square foot area of 75,400 versus 38,000, and as a result projects cost are approximately twice as much for this alternative at \$18,854,000 compared to Concept 2 at \$9,027,000. Tax revenue will also be higher for Concept 1 than Concept 2 based on the greater square foot building area.

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LEGEND

EXIST. PROPERTY LINE	
NEW PROPERTY LINE	
BLDG. SETBACK LINE	
100' MAWPA BUFFER ZONE	
200' RIVERFRONT AREA	
BLSF LIMIT LINE	

Zoning Information		
Zone District:	<i>Central Village</i>	<i>Rural Residential</i>
Dimensional Requirements		
Lot Size (s.f.)	21,780	87,120
Frontage (ft.)	125	225
Front & Rear Setbacks (ft.)	20	50
Side Setback (ft.)	10	50
Rear Setback (ft.)	20	50
Lot Coverage (%)	70	35

GENERAL NOTES:

- EXISTING CONDITIONS INFORMATION ON PLANS IS DERIVED FROM RECORD DATA FROM MASSGIS, ERVING ASSESSORS OFFICE, AND THE FRANKLIN REGIONAL COUNCIL OF GOVERNMENTS.
- WETLAND RESOURCE AREAS AND BUFFER ZONES ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO FINAL DESIGN.

SEE SHEET 4

SHEET 1: OVERALL SITE PLAN

ERVING INTERNATIONAL PAPER MILL  
REDEVELOPMENT FEASIBILITY STUDY  
ERVING, MASSACHUSETTS

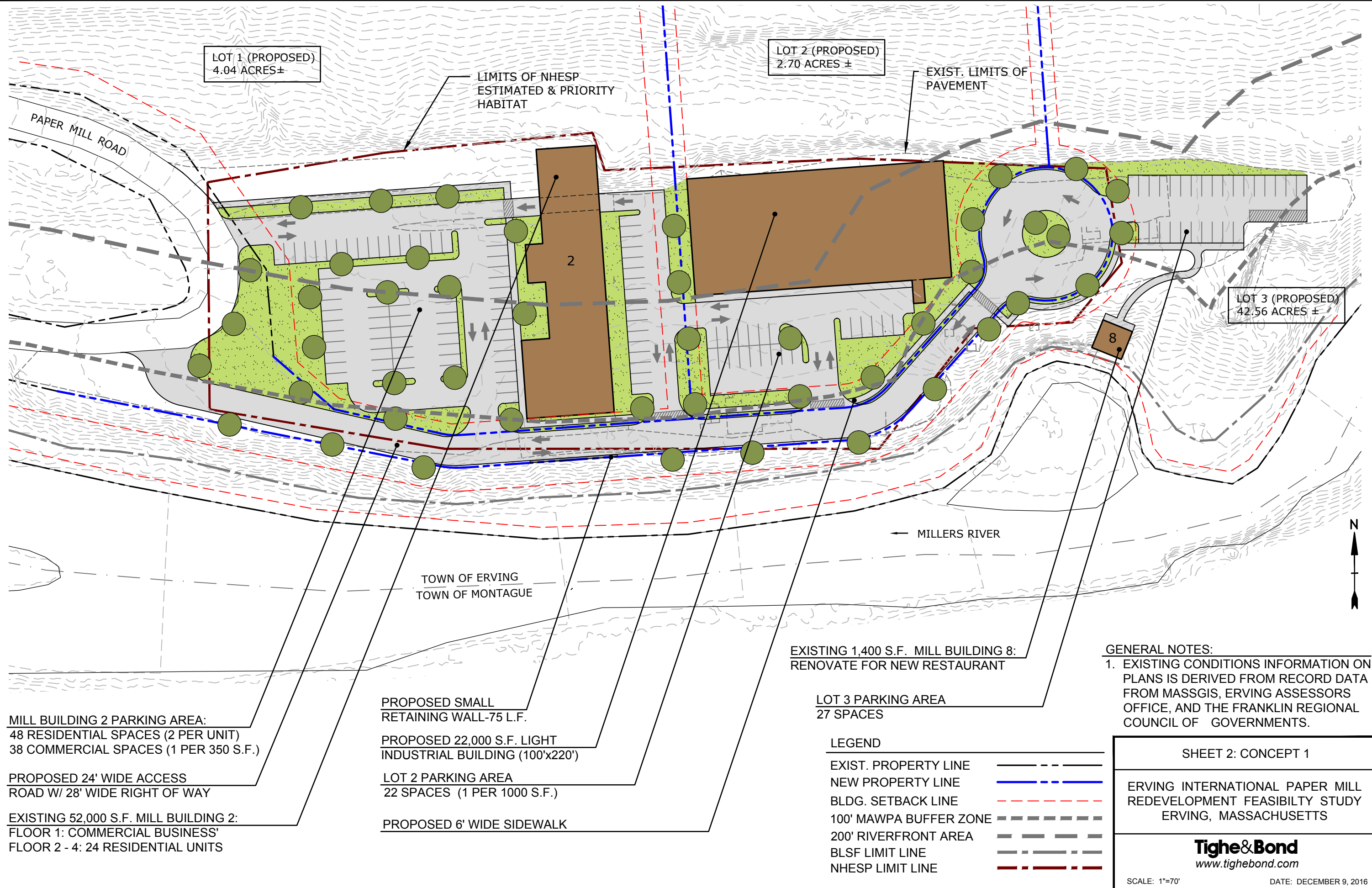
**Tighe&Bond**  
www.tighebond.com

SCALE: 1"=300'

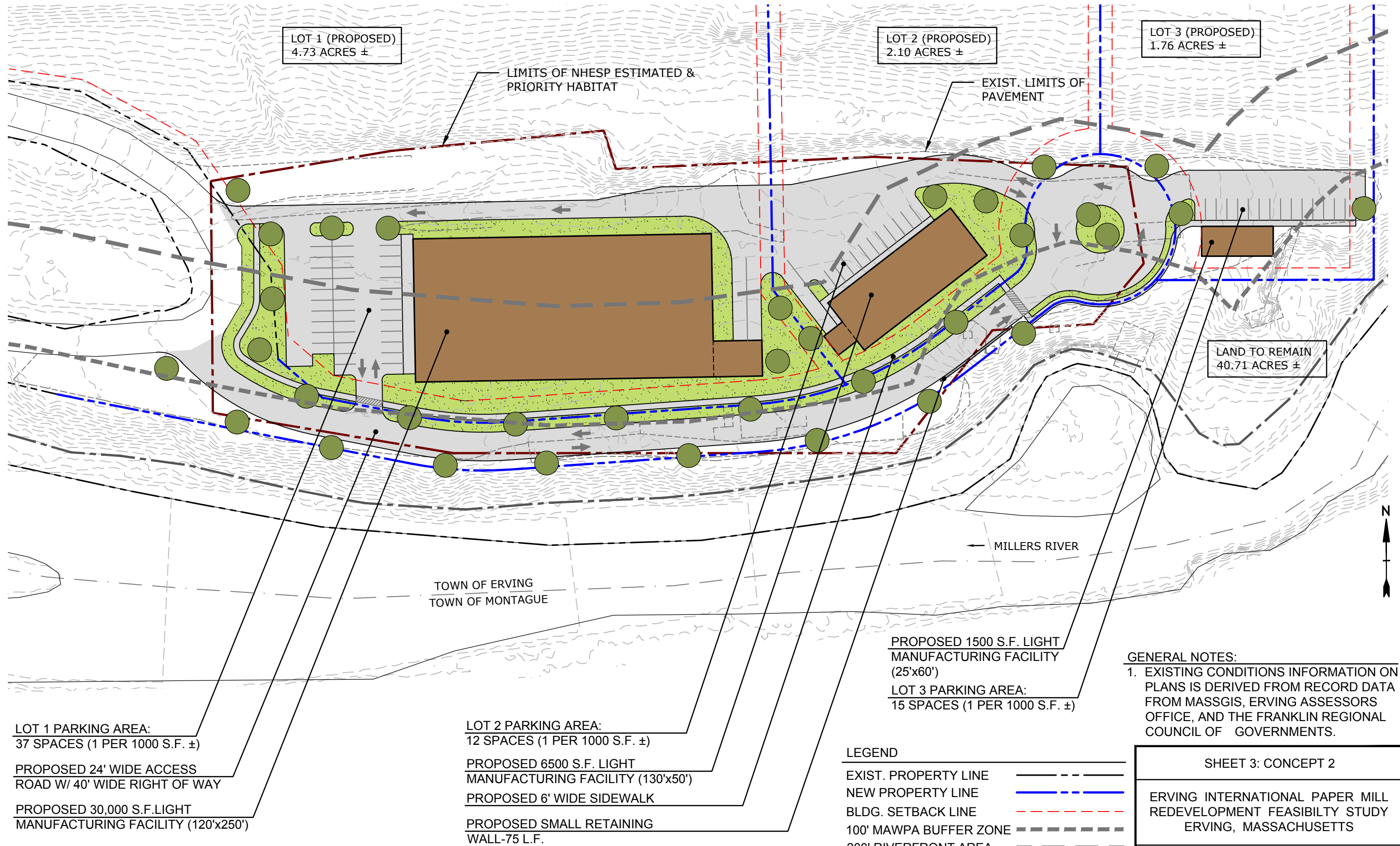
DATE: DECEMBER 9, 2016



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GENERAL NOTES:  
1. EXISTING CONDITIONS INFORMATION ON PLANS IS DERIVED FROM RECORD DATA FROM MASSGIS, ERVING ASSESSORS OFFICE, AND THE FRANKLIN REGIONAL COUNCIL OF GOVERNMENTS.

SHEET 3: CONCEPT 2

ERVING INTERNATIONAL PAPER MILL REDEVELOPMENT FEASIBILITY STUDY  
ERVING, MASSACHUSETTS

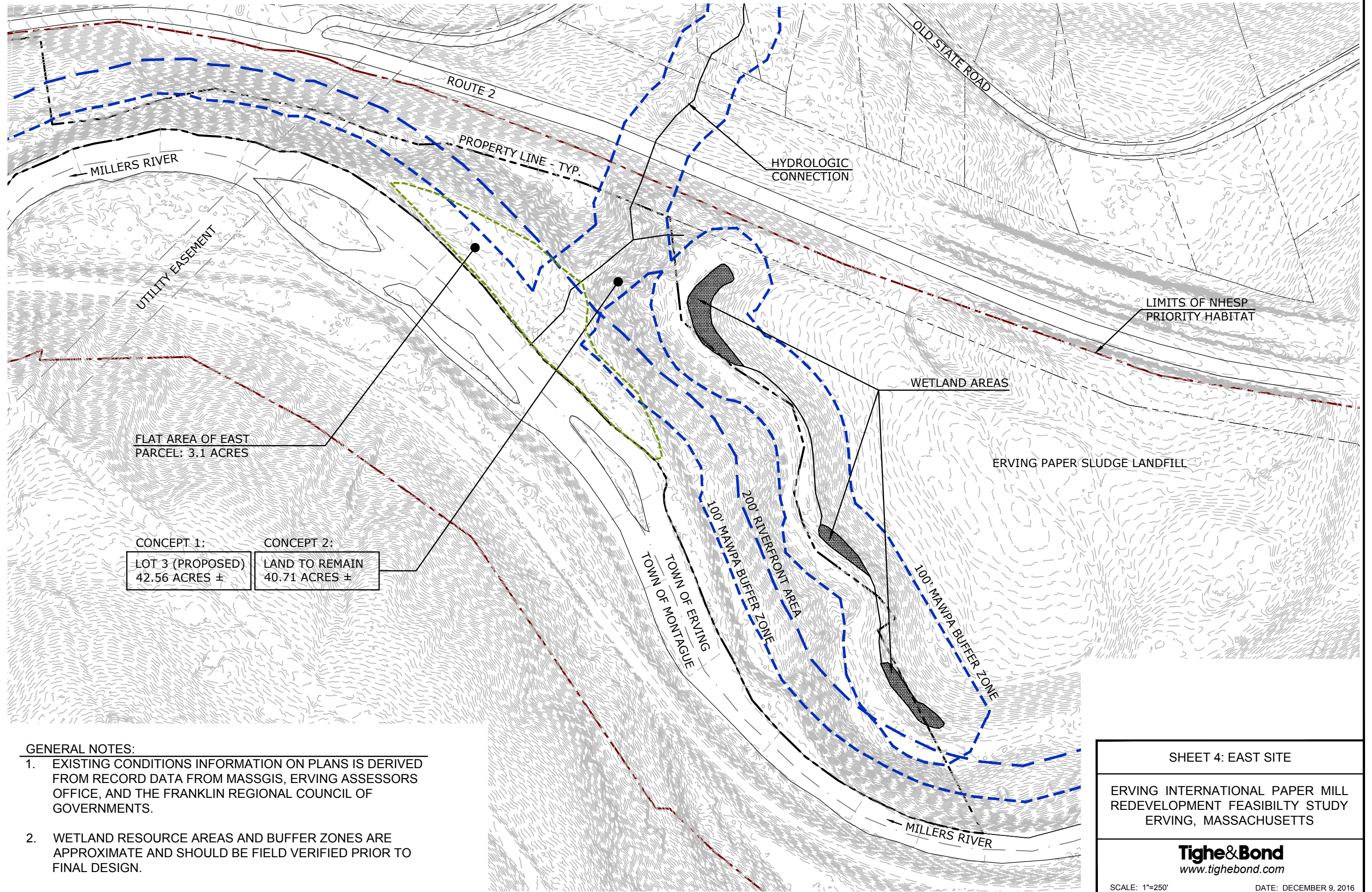
**Tighe&Bond**  
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SCALE: 1"=70'

DATE: DECEMBER 9, 2016



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**GENERAL NOTES:**

1. EXISTING CONDITIONS INFORMATION ON PLANS IS DERIVED FROM RECORD DATA FROM MASSGIS, ERVING ASSESSORS OFFICE, AND THE FRANKLIN REGIONAL COUNCIL OF GOVERNMENTS.
2. WETLAND RESOURCE AREAS AND BUFFER ZONES ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO FINAL DESIGN.

SHEET 4: EAST SITE

ERVING INTERNATIONAL PAPER MILL  
REDEVELOPMENT FEASIBILITY STUDY  
ERVING, MASSACHUSETTS

**Tighe&Bond**  
www.tighebond.com

SCALE: 1"=250'

DATE: DECEMBER 9, 2016







MASSWILDLIFE

## DIVISION OF FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581  
p: (508) 389-6300 | f: (508) 389-7890  
**MASS.GOV/MASSWILDLIFE**

Jack Buckley, *Director*

December 14, 2016

Emily Tully  
Tighe & Bond, Inc.  
53 Southampton Road  
Westfield MA 01085

RE: Project Location: Papermill Road  
Town: ERVING  
NHESP Tracking No.: 08-25792

To Whom It May Concern:

Thank you for contacting the Natural Heritage and Endangered Species Program of the MA Division of Fisheries & Wildlife (the "Division") for information regarding state-listed rare species in the vicinity of the above referenced site. Based on the information provided, this project site, or a portion thereof, is located **within** *Priority Habitat 1337* (PH 1337) and *Estimated Habitat 76* (EH 76) as indicated in the *Massachusetts Natural Heritage Atlas* (13<sup>th</sup> Edition). Our database indicates that the following state-listed rare species have been found in the vicinity of the site:

<u>Scientific name</u>	<u>Common Name</u>	<u>Taxonomic Group</u>	<u>State Status</u>
<i>Glyptemys insculpta</i>	Wood Turtle	Reptile	Special Concern

The species listed above is protected under the Massachusetts Endangered Species Act (MESA) (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00). State-listed wildlife are also protected under the state's Wetlands Protection Act (WPA) (M.G.L. c. 131, s. 40) and its implementing regulations (310 CMR 10.00). Fact sheets for most state-listed rare species can be found on our website ([www.mass.gov/nhesp](http://www.mass.gov/nhesp)).

Please note that projects and activities located within Priority and/or Estimated Habitat **must** be reviewed by the Division for compliance with the state-listed rare species protection provisions of MESA (321 CMR 10.00) and/or the WPA (310 CMR 10.00).

### Wetlands Protection Act (WPA)

If the project site is within Estimated Habitat and a Notice of Intent (NOI) is required, then a copy of the NOI must be submitted to the Division so that it is received at the same time as the local conservation commission. If the Division determines that the proposed project will adversely affect the actual Resource Area habitat of state-protected wildlife, then the proposed project may not be permitted (310 CMR 10.37, 10.58(4)(b) & 10.59). In such a case, the project proponent may request a consultation with the Division to discuss potential project design modifications that would avoid adverse effects to rare wildlife habitat.

MASSWILDLIFE

A streamlined joint MESA/WPA review process is available. When filing a Notice of Intent (NOI), the applicant may file concurrently under the MESA on the same NOI form and qualify for a 30-day streamlined joint review. For a copy of the NOI form, please visit the MA Department of Environmental Protection's website: <http://www.mass.gov/eea/agencies/massdep/service/approvals/wpa-form-3.html>.

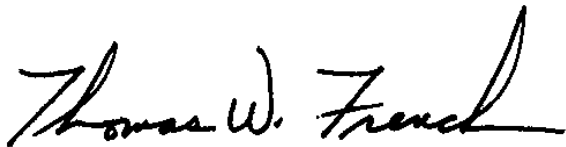
#### **MA Endangered Species Act (MESA)**

If the proposed project is located within Priority Habitat and is not exempt from review (see 321 CMR 10.14), then project plans, a fee, and other required materials must be sent to Natural Heritage Regulatory Review to determine whether a probable Take under the MA Endangered Species Act would occur (321 CMR 10.18). Please note that all proposed and anticipated development must be disclosed, as MESA does not allow project segmentation (321 CMR 10.16). For a MESA filing checklist and additional information please see our website: [www.mass.gov/dfw/nhsp/regulatory-review](http://www.mass.gov/dfw/nhsp/regulatory-review).

We recommend that rare species habitat concerns be addressed during the project design phase prior to submission of a formal MESA filing, as avoidance and minimization of impacts to rare species and their habitats is likely to expedite endangered species regulatory review.

This evaluation is based on the most recent information available in the Natural Heritage database, which is constantly being expanded and updated through ongoing research and inventory. If the purpose of your inquiry is to generate a species list to fulfill the federal Endangered Species Act (16 U.S.C. 1531 et seq.) information requirements for a permit, proposal, or authorization of any kind from a federal agency, we recommend that you contact the National Marine Fisheries Service at (978)281-9328 and use the U.S. Fish and Wildlife Service's Information for Planning and Conservation website (<https://ecos.fws.gov/ipac>). If you have any questions regarding this letter please contact Daisy Medeiros, Endangered Species Review Assistant, at (508) 389-6357.

Sincerely,

A handwritten signature in black ink that reads "Thomas W. French". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Thomas W. French, Ph.D.  
Assistant Director



## Natural Heritage & Endangered Species Program

[www.mass.gov/nhesp](http://www.mass.gov/nhesp)

*Massachusetts Division of Fisheries & Wildlife*

## Wood Turtle

### *Glyptemys insculpta*

State Status: **Special Concern**

Federal Status: **None**

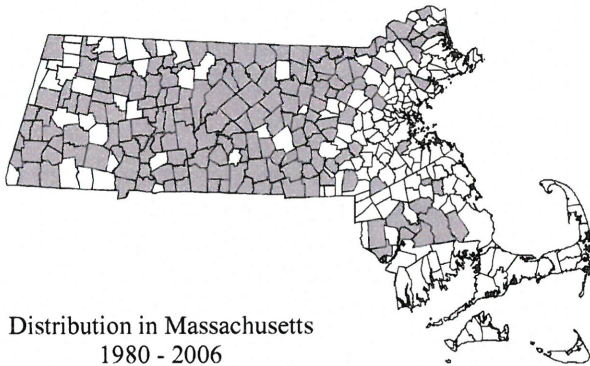
**DESCRIPTION:** The Wood Turtle is a medium-sized turtle (14-20 cm; 5.5-8 in) that can be recognized by its sculpted shell and orange coloration on the legs and neck. The carapace (upper shell) is rough and each scale (scute) rises upwards in an irregularly shaped pyramid of grooves and ridges. The carapace is tan, grayish-brown or brown, has a mid-line ridge (keel) and often has a pattern of black or yellow lines on the larger scutes. The plastron (lower shell) is yellow with oblong dark patches on the outer, posterior corner of each scute. The head is black, but may be speckled with faint yellow spots. The legs, neck, and chin can have orange to reddish coloration. Males have a concave plastron, thick tail, long front claws, and a wider and more robust head than females. Hatchlings have a dull-colored shell that is broad and low and a tail that is almost as long as their carapace, and they lack orange coloration on the neck and legs.



Photo by Mike Jones

**SIMILAR SPECIES:** The habitat of the Eastern Box Turtle (*Terrapene carolina*) and the Blanding's Turtle (*Emydoidea blandingii*) may overlap that of the Wood Turtle, but neither has the Wood Turtle's pyramidal shell segments. Unlike the Wood Turtle, the Box and Blanding's turtles have hinged plastrons into which they can withdraw or partially withdraw if threatened. The Northern Diamond-backed Terrapin (*Malaclemys terrapin*) has a shell similar to that of the Wood Turtle. However, its skin is grey and it lives only near brackish water, which the Wood Turtle avoids.

**RANGE:** The Wood Turtle can be found throughout New England, north to Nova Scotia, west to eastern Minnesota, and south to northern Virginia. The Wood Turtle appears to be widespread in Massachusetts. However, it should be kept in mind that little is known about the status of local populations associated with the majority of these sightings. Most of the towns have fewer than 5 known occurrences.



Distribution in Massachusetts  
1980 - 2006  
Based on records in  
Natural Heritage Database

*A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan*

## Massachusetts Division of Fisheries & Wildlife

1 Rabbit Hill Rd., Westborough, MA; tel: 508-389-6300; fax: 508-389-7890; [www.mass.gov/dfw](http://www.mass.gov/dfw)

Please allow the Natural Heritage & Endangered Species Program to continue to conserve the biodiversity of Massachusetts with a contribution for 'endangered wildlife conservation' on your state income tax form, as these donations comprise a significant portion of our operating budget.

[www.mass.gov/nhesp](http://www.mass.gov/nhesp)



**HABITAT IN MASSACHUSETTS:** The preferred habitat of the Wood Turtle is riparian areas. Slower moving mid-sized streams are favored, with sandy bottoms and heavily vegetated stream banks. The stream bottom and muddy banks provide hibernating sites for overwintering, and open areas with sand or gravel substrate near the streams edge are used for nesting. Wood Turtles spend most of the spring and summer in mixed or deciduous forests, fields, hay fields, and riparian wetlands, including wet meadows, bogs, and beaver ponds. Then they return to the streams in late summer or early fall to their favored overwintering location.

**LIFE CYCLE & BEHAVIOR:** The Wood Turtle typically spends the winter in flowing rivers and perennial streams. Full-time submersion in the water begins in November, once freezing occurs regularly overnight, and continues until temperatures begin to increase in spring. It may hibernate alone or in large groups in community burrows in muddy banks, stream bottoms, deep pools, instream woody debris, and abandoned muskrat burrows. The Wood Turtle may make underwater movements in the stream during the winter; however, extended periods of activity and emergence from the water do not occur until mid-March or early April.

In spring, Wood Turtles are active during the day and are usually encountered within a few hundred meters from the stream banks. They have relatively linear home ranges that can be a half mile in length in Massachusetts (M. Jones, unpubl data). They will use emergent logs or grassy, sandy, and muddy banks to soak up the spring sun. During the summer months they feed in early successional fields, hayfields, and forests.

Wood Turtles are opportunistic omnivores; their diet consists of both plant and animal matter that is consumed on land and in the water. The Wood Turtle occasionally exhibits an unusual feeding behavior referred to as “stomping.” In its search for food, this species will stomp on the ground alternating its front feet, creating vibrations in the ground resembling rainfall. Earthworms respond, rising to the ground’s surface to keep from drowning. Instead of rain, the earthworm is met by the Wood Turtle, and is promptly devoured.

Although the peaks in mating activity occur in the spring and fall, Wood Turtles are known to mate opportunistically throughout their activity period. Males have been observed exhibiting aggressive behavior such as chasing, biting, and butting both during the mating season and at other times. A courtship ritual “dance” typically takes place at the edge of a stream or brook for several hours prior to mating. The dance involves the male and female approaching each other slowly with necks extended and their heads up. Before they actually touch noses, they lower their heads, and swing them from side to side. Copulation usually takes place in the water. Courting adults may produce a very subdued whistle that is rarely heard by observers. A female may mate with multiple individuals over the course of the active season.

In Massachusetts, most nesting occurs over a four-week period, primarily in June. Nesting sites may be a limited resource for Wood Turtles. Females are known to travel long distances in search of appropriate nesting habitat (average straight line distance of 244 m/800 ft). Once they have arrived at a suitable nesting area, there may be multiple nesting attempts or false nests that occur over the course of several days, prior to laying eggs. They abort attempts when disturbed (e.g., by human activities) early in the process or they hit a large rock while digging. Female Wood Turtles lay one clutch a year and often congregate in a good nesting area. Clutch size in Massachusetts averages 7 eggs (Jones, 2004, pers. comm.). Hatchling emergence occurs from August through September. The life span of the adult Wood Turtle is easily 46 years and may reach as much as 100 years.

**THREATS:** Hatchling and juvenile survival is very low and the time to sexual maturity is long. These characteristics are compensated by adults living a long time and reproducing for many years. Adult survivorship must be very high to sustain a viable population. These characteristics make Wood Turtles vulnerable to human disturbances. Population declines of Wood Turtles have likely been caused by hay-mowing operations, development of wooded stream banks, roadway casualties, incidental collection of specimens for pets, unnaturally inflated rates of predation in suburban and urban areas, forestry and agricultural activities, and pollution of streams.

### ***A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan***

Please allow the Natural Heritage & Endangered Species Program to continue to conserve the biodiversity of Massachusetts with a contribution for ‘endangered wildlife conservation’ on your state income tax form, as these donations comprise a significant portion of our operating budget.

[www.mass.gov/nhesp](http://www.mass.gov/nhesp)

**MANAGEMENT RECOMMENDATIONS:** Using a turtle habitat model developed by UMass and NHESP records, Wood Turtle habitat needs to be assessed and prioritized for protection based on the extent, quality, and juxtaposition of habitats and their predicted ability to support self-sustaining populations of Wood Turtles. Other considerations should include the size and lack of fragmentation of both riverine and upland habitats and proximity and connectivity to other relatively unfragmented habitats, especially within existing protected open space. This information will be used to direct land acquisition and to target areas for Conservation Restrictions (CRs), Agricultural Preservation Restrictions (APRs), and Landowner Incentive Program (LIP) projects.

Mowing and nest site creation guidelines developed by NHESP should be followed on properties managed for Wood Turtles. These practices will be most practical on state-owned conservation lands. However, these materials are also available to town land managers and private landowners.

Alternative wildlife corridor structures should be considered at strategic sites on existing roads. In particular, appropriate wildlife corridor structures should be considered for bridge and culvert upgrades and road-widening projects within or near Wood Turtle habitat. Efforts should be made to inform local regulatory agencies of key locations where these measures would be most effective for Wood Turtle conservation.

Educational materials are being developed and distributed to the public in reference to the detrimental effects of keeping our native Wood Turtles as pets (an illegal activity that reduces reproduction in the population), releasing pet store turtles (which could spread disease), leaving cats and dogs outdoors unattended (particularly during the nesting season), mowing of fields and shrubby areas, feeding suburban wildlife (which increases the number of natural predators on turtles), and driving ATVs in nesting areas from June-October. People should be encouraged, when safe to do so, to help Wood Turtles cross roads (always in the direction the animal was heading); however, turtles should never be transported to “better” locations. They will naturally want to return to their original location and likely need to traverse roads to do so.

Increased law enforcement is needed to protect our wild turtles, particularly during the nesting season when poaching is most frequent and ATV use is common and most damaging.

Forestry Conservation Management Practices should be applied on state and private lands to avoid direct turtle mortality. Seasonal timber harvesting restrictions apply to Wood Turtle habitat and to upland habitat that occurs up to 600 ft (183 m) beyond the stream edge. Motorized vehicle access to timber harvesting sites in Wood Turtle habitat is restricted to times when the Wood Turtle is overwintering. Bridges should be laid down across streams prior to any motorized equipment crossing the stream in order to maintain the structural integrity of overwintering sites.

Finally, a statewide monitoring program is needed to track long-term population trends in Wood Turtles.

#### ACTIVE PERIOD

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

#### REFERENCES:

- Compton, B. 2006. Personal Communication. University of Massachusetts, Dept of Natural Resources Conservation, Amherst, MA
- DeGraaf, R.M., and D.D. Rudis. 1983. *Amphibians and Reptiles of New England*. Amherst, Massachusetts: The University of Massachusetts.
- Ernst, C.H., J.E. Lovich, and R.W. Barbour. 1994. *Turtles of the United States and Canada*. Smithsonian Institution Press, Washington and London.
- Jones, M. 2006. Personal Communication. University of Massachusetts, Dept. of Natural Resources Conservation, Amherst, MA.
- Kaufmann, J.H. 1986. Stomping for earthworms by Wood Turtles, *Clemmys insculpta*: A newly discovered foraging technique. *Copeia* 1986(4), pp.1001-1004.

Updated 2015

#### **A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan**

Please allow the Natural Heritage & Endangered Species Program to continue to conserve the biodiversity of Massachusetts with a contribution for ‘endangered wildlife conservation’ on your state income tax form, as these donations comprise a significant portion of our operating budget.

[www.mass.gov/nhesp](http://www.mass.gov/nhesp)



**ERVING INTERNATIONAL PAPER MILL - REDEVELOPMENT FEASIBILITY STUDY**  
**CONCEPTUAL OPINION OF PROBABLE CONSTRUCTION COST**

**TABLE 4-1**

Project Summary and OPCC Redevelopment Alternatives

	Concept 1	Concept 2
<b>Building Complex Information</b>		
Existing Building Units Redevelop	2 & 8	NA
Square Foot New Building Commercial Construction (sf)	22,000	38,000
Square Foot Residential Redevelopment Area (sf)	39,000	NA
Building 2: 13,000 sf (Three floors)		
Square Foot Commercial Redevelopment Area (sf)	14,400	NA
Building 2: 13,000 sf (First floor)		
Building 8: 1,400 sf		
Square Foot Demolition Area (sf)	156,335	210,575
<b>Total Development Building Footprint Area (sf)</b>	<b>36,400</b>	<b>38,000</b>
<b>Total Development Building Gross Area (sf)</b>	<b>75,400</b>	<b>38,000</b>
<b>Conceptual Opinion of Probable Construction Costs</b>		
New Building Construction Costs	\$1,888,000	\$3,284,000
Residential Building Improvement Costs	\$5,838,000	NA
Commercial Building Improvements Costs	\$1,846,000	NA
Structural Repair Costs	\$1,390,000	NA
Demolition Costs	\$820,000	\$1,142,000
Infrastructure Costs - Water & Sewer	\$437,000	\$442,000
Site Work Costs	\$1,129,000	\$1,360,000
Hazardous Building Material Abatement	\$79,000	\$200,000
<b>Subtotal OPCC</b>	<b>\$13,427,000</b>	<b>\$6,428,000</b>
<i>Concept Unit Price (Cost/Gross Area (sf))</i>	<i>\$178.08</i>	<i>\$169.16</i>
<b>Allowances</b>		
Contingency (20% )	\$2,686,000	\$1,286,000
General Conditions (10% )	\$1,343,000	\$643,000
Insurance (1.10%)	\$148,000	\$71,000
Bonds (0.8%)	\$108,000	\$52,000
Environmental Permit (1.5%)	\$202,000	\$97,000
Architect and Engineering Fees (7%)	\$940,000	\$450,000
<b>Subtotal Allowances</b>	<b>\$5,427,000</b>	<b>\$2,599,000</b>
<b>Total OPCC &amp; Allowances</b>	<b>\$18,854,000</b>	<b>\$9,027,000</b>



**ERVING INTERNATIONAL PAPER MILL - REDEVELOPMENT FEASIBILITY STUDY**  
**CONCEPTUAL OPINION OF PROBABLE CONSTRUCTION COST**  
**DEMOLITION AND STRUCTURAL REPAIR COSTS**  
**Concept 1 - Re-use of Building 2 & 8**

ITEM	DESCRIPTION	UNITS	QTY	UNIT PRICE	TOTAL
<b>1.</b>	<b>Building Demolition</b>				
	Building 1a	SF	9,000	\$4	\$36,000
	Building 1b	SF	14,000	\$6	\$84,000
	Building 1c	SF	2,750	\$5	\$13,750
	Building 1d	SF	1,650	\$4	\$6,600
	Building 1e	SF	1,650	\$4	\$6,600
	Building 3	SF	3,220	\$3	\$9,660
	Building 4a	SF	19,800	\$6	\$118,800
	Building 4b	SF	9,120	\$6	\$54,720
	Building 4c	SF	5,400	\$5	\$27,000
	Building 4d	SF	970	\$4	\$3,880
	Building 4e	SF	1,400	\$4	\$5,600
	Building 4f	SF	1,900	\$5	\$9,500
	Building 5a	SF	34,600	\$6	\$207,600
	Building 5b	SF	7,650	\$6	\$45,900
	Building 5c	SF	1,000	\$3	\$3,000
	Building 5d	SF	4,200	\$7	\$29,400
	Building 5e	SF	700	\$6	\$4,200
	Building 6a	SF	9,000	\$5	\$45,000
	Building 6b	SF	11,475	\$4	\$45,900
	Building 6c	SF	5,850	\$5	\$29,250
	Building 7a	SF	6,000	\$3	\$18,000
	Building 7b	SF	5,000	\$3	\$15,000
	Total		156,335		<b>\$819,360</b>
<b>2.</b>	<b>Building Structural Improvements</b>				
	Building 2	SF	52,800	\$25	\$1,320,000
	Building 8	SF	1,400	\$50	\$70,000
	Total		54,200		<b>\$1,390,000</b>

ERVING INTERNATIONAL PAPER MILL - REDEVELOPMENT FEASIBILITY STUDY  
 CONCEPTUAL OPINION OF PROBABLE CONSTRUCTION COST  
 DEMOLITION AND STRUCTURAL REPAIR COSTS  
 Concept 2 - Demolition of all buildings

ITEM	DESCRIPTION	UNITS	QTY	UNIT PRICE	TOTAL
1.	<b>Building Demolition</b>				
	Building 1a	SF	9,000	\$4	\$36,000
	Building 1b	SF	14,000	\$6	\$84,000
	Building 1c	SF	2,750	\$5	\$13,750
	Building 1d	SF	1,650	\$4	\$6,600
	Building 1e	SF	1,650	\$4	\$6,600
	Building 2	SF	52,840	\$6	\$317,040
	Building 3	SF	3,220	\$3	\$9,660
	Building 4a	SF	19,800	\$6	\$118,800
	Building 4b	SF	9,120	\$6	\$54,720
	Building 4c	SF	5,400	\$5	\$27,000
	Building 4d	SF	970	\$4	\$3,880
	Building 4e	SF	1,400	\$4	\$5,600
	Building 4f	SF	1,900	\$5	\$9,500
	Building 5a	SF	34,600	\$6	\$207,600
	Building 5b	SF	7,650	\$6	\$45,900
	Building 5c	SF	1,000	\$3	\$3,000
	Building 5d	SF	4,200	\$7	\$29,400
	Building 5e	SF	700	\$6	\$4,200
	Building 6a	SF	9,000	\$5	\$45,000
	Building 6b	SF	11,475	\$4	\$45,900
	Building 6c	SF	5,850	\$5	\$29,250
	Building 7a	SF	6,000	\$3	\$18,000
	Building 7b	SF	5,000	\$3	\$15,000
	Building 8	SF	1,400	\$4	\$5,600
	Total		210,575		<b>\$1,142,000</b>

**ERVING INTERNATIONAL PAPER MILL - REDEVELOPMENT FEASIBILITY STUD**  
**CONCEPTUAL OPINION OF PROBABLE CONSTRUCTION COST**  
**INFRASTRUCTURE COSTS**

**Water Infrastructure**

**Concept 1**

Item	Qty	Unit	Price	Cost
Loop Pipe	1800	lf	\$125	\$225,000
Building Pipe	130	lf	\$125	\$16,250
Fire Hydrants	3	ea	\$2,000	\$6,000
<b>Category 1 Subtotal</b>				<b>\$247,250</b>

**Concept 2**

Item	Qty	Unit	Price	Cost
Loop Pipe	1800	lf	\$125	\$225,000
Building Pipe	130	lf	\$125	\$16,250
Fire Hydrants	3	ea	\$2,000	\$6,000
<b>Category 2 Subtotal</b>				<b>\$247,250</b>

**Wastewater Infrastructure**

**Concept 1**

Item	Qty	Unit	Price	Cost
Pump Station*	1	ea	\$45,000	\$45,000
Sanitary Sewer	870	lf	\$150	\$130,500
Manholes	4	ea	\$3,500	\$14,000
<b>Category 1 Subtotal</b>				<b>\$189,500</b>

**Concept 2**

Item	Qty	Unit	Price	Cost
Pump Station*	1	ea	\$50,000	\$50,000
Sanitary Sewer	870	lf	\$150	\$130,500
Manholes	4	ea	\$3,500	\$14,000
<b>Category 2 Subtotal</b>				<b>\$194,500</b>

\*Pump Station Calculation

	Flow Rate	Base Cost	Cost
RS Means Basis	200,000		\$300,000
Concept 1	22,875	\$10,000	\$44,313
Concept 2	26,380	\$10,000	\$49,570

**Total Cost - Water & Wastewater**

Scenario	Cost
Concept 1	\$436,750
Concept 2	\$441,750

**ERVING INTERNATIONAL PAPER MILL - REDEVELOPMENT FEASIBILITY STUDY**  
**CONCEPTUAL OPINION OF PROBABLE CONSTRUCTION COST**  
**SITE WORK & BUILDING CONSTRUCTION COSTS**

**Concept 1**

<b>Site Work</b>					
ITEM	DESCRIPTION	UNITS	QTY	UNIT PRICE	TOTAL
1.	Pavement Reconstruction	Square Yard	10,300	\$40	\$412,000
2.	Cement Concrete Sidewalks with Integral Curb	Square Yard	825	\$55	\$45,375
3.	Bituminous Concrete Curb	Foot	4,540	\$6	\$27,240
4.	Lawn/Landscape Repairs	Square Yard	4,460	\$8	\$35,680
5.	Trees	Each	46	\$400	\$18,400
6.	Retaining Wall	Square Foot	150	\$26	\$3,900
7.	Drainage Piping	Foot	1,800	\$60	\$108,000
8.	Drainage Structures	Each	32	\$4,000	\$128,000
9.	Stormwater Detention/Treatment	Lump Sum	1	\$50,000	\$50,000
10.	Parking Lot Lighting System	Allowance	1	\$300,000	\$300,000
<b>Site Development - Concept 1</b>					<b>\$1,128,595</b>

<b>Building - New</b>					
ITEM	DESCRIPTION	UNITS	QTY	UNIT PRICE	TOTAL
	New Building - Warehouse Area	Square Foot	18,400	\$83	\$1,527,200
	New Building - Office Area	Square Foot	3,600	\$100	\$360,000
			<b>22,000</b>		
<b>New Building Construction - Concept 1</b>					<b>\$1,887,200</b>

<b>Building - Residential Redevelopment</b>					
ITEM	DESCRIPTION	UNITS	QTY	UNIT PRICE	TOTAL
	Building 2 - Residential	Square Foot	39,000	\$150	\$5,837,794
			<b>39,000</b>		
<b>Residential Redevelopment Building Construction - Concept 1</b>					<b>\$5,837,794</b>

<b>Building - Commercial Redevelopment</b>					
ITEM	DESCRIPTION	UNITS	QTY	UNIT PRICE	TOTAL
	Building 2 - Commercial	Square Foot	13,000	\$128	\$1,665,956
	Building 8 - Commercial	Square Foot	1,400	\$128	\$179,411
			<b>14,400</b>		
<b>Commercial Redevelopment Building Construction - Concept 1</b>					<b>\$1,845,367</b>

**Concept 2**

<b>Site Work</b>					
ITEM	DESCRIPTION	UNITS	QTY	UNIT PRICE	TOTAL
1.	Pavement Reconstruction	Square Yard	16,230	\$40	\$649,200
2.	Cement Concrete Sidewalks with Integral Curb	Square Yard	816	\$55	\$44,880
3.	Bituminous Concrete Curb	Foot	4,370	\$6	\$26,220
4.	Lawn/Landscape Repairs	Square Yard	4,423	\$8	\$35,384
5.	Trees	Each	34	\$400	\$13,600
6.	Retaining Wall	Square Foot	150	\$26	\$3,900
7.	Drainage Piping	Foot	1,800	\$60	\$108,000
8.	Drainage Structures	Each	32	\$4,000	\$128,000
9.	Stormwater Detention/Treatment	Lump Sum	1	\$50,000	\$50,000
10.	Parking Lot Lighting System	Allowance	1	\$300,000	\$300,000
<b>Site Development - Concept 2</b>					<b>\$1,359,184</b>

<b>Buildings - New</b>					
ITEM	DESCRIPTION	UNITS	QTY	UNIT PRICE	TOTAL
	New Buildings - Warehouse Areas	Square Foot	30,400	\$83	\$2,523,200
	New Buildings - Office Areas	Square Foot	7,600	\$100	\$760,000
			<b>38,000</b>		
<b>Building Construction - Concept 2</b>					<b>\$3,283,200</b>

ERVING INTERNATIONAL PAPER MILL - REDEVELOPMENT FEASIBILITY STUDY  
CONCEPTUAL OPINION OF PROBABLE CONSTRUCTION COST  
HAZARDOUS BUILDING MATERIAL ABATEMENT

Architect	HBM	ACM	OHM	Total
1a	1	\$ 8,000	\$ 4,500	\$ 12,500
1b	2ADD	\$ 3,641	\$ 5,462	\$ 9,103
1c	2A	\$ 1,359	\$ 2,038	\$ 3,397
1d	2B	\$ -	\$ 500	\$ 500
1e	Ship Dock			\$ -
2	2	\$ 54,000	\$ 4,000	\$ 58,000
3	Fuel Store			\$ -
4a	3	\$ 500	\$ 2,500	\$ 3,000
4b	4 & 3	\$ 2,247		\$ 2,247
4c	12	\$ 200	\$ 14,000	\$ 14,200
4d	529 SF & 3			\$ -
4e	5	\$ 864	\$ 185	\$ 1,049
5a	7	\$ 8,213	\$ 1,760	\$ 9,973
5b	6	\$ 2,676	\$ 573	\$ 3,249
5c	NA			\$ -
5d	8	\$ 43,000	\$ 3,000	\$ 46,000
6a	9	\$ 1,741	\$ 1,951	\$ 3,692
6b	9A & 10	\$ 3,092	\$ 3,466	\$ 6,558
6c	9B	\$ 2,439	\$ 1,083	\$ 3,522
7a	Stockhouse			\$ 2,000
7b	Pulp Receive	\$ -	\$ 2,000	\$ -
8	17	\$ 20,000	\$ 500	\$ 20,500
<b>Total</b>		<b>\$ 151,973</b>	<b>\$ 47,519</b>	<b>\$ 199,491</b>

Concept	Buildings	Total
Concept 1	2 & 8	\$ 78,500
Concept 2	All	\$ 199,491

**ERVING INTERNATIONAL PAPER MILL - REDEVELOPMENT FEASIBILITY STUDY**  
**CONCEPTUAL OPINION OF PROBABLE CONSTRUCTION COST**  
**RESIDENTIAL AND COMMERCIAL BUILDING IMPROVEMENT COSTS**

Division	Description	Residential				Commercial				Source
		Test Area Quantity (Bldg 2 - One Floor)	Unit Cost	Unit	Test Area Cost (Bldg 2 - One Floor)	Test Area Quantity (SF)	Unit Cost	Unit	Test Area Cost (Bldg 2 - One Floor)	
01 General Requirements	See Table 8-1 for mark-ups	Excluded				Excluded				None
02 Site Construction	Site Remediation	Excluded				Excluded				None
03 Concrete	Cast-in-Place Foundations	520	\$65.47	SF	\$34,044.40	520	\$65.47	SF	\$34,044.40	Recent Est.
04 Masonry	Unit Masonry	2,106	\$16.10	SF	\$33,906.60	2,106	\$16.10	SF	\$33,906.60	RSMeans
	Masonry Restoration/Repainting	6,786	\$7.50	SF	\$50,895.00	6,786	\$7.50	SF	\$50,895.00	RSMeans
05 Metals	Structural Steel Framing	520	\$30.09	SF	\$15,646.80	520	\$30.09	SF	\$15,646.80	Recent Est.
	Metal Stair	78	\$640.00	Riser	\$49,920.00	78	\$640.00	Riser	\$49,920.00	RSMeans
	Metal Decking	520	\$6.26	SF	\$3,255.20	520	\$6.26	SF	\$3,255.20	Recent Est.
06 Wood and Plastics	Architectural Woodwork	2,140	\$5.00	SF	\$10,700.00	1,000	\$5.00	SF	\$5,000.00	Recent Est.
	Thermal and Moisture Damp/waterproofing	10,343	\$0.92	SF	\$9,515.56	10,343	\$0.92	SF	\$9,515.56	Recent Est.
07 Thermal and Moisture	Insulation	9,765	\$5.71	SF	\$55,758.15	0	\$5.71	SF	\$0.00	Recent Est.
	Thermal and Moisture Aluminium Cladding	900	\$6.85	SF	\$6,165.00	900	\$6.85	SF	\$6,165.00	RSMeans
	Thermal and Moisture Membrane Roofing	3,557	\$2.10	SF	\$7,469.70	3,557	\$2.10	SF	\$7,469.70	RSMeans
	Doors and Windows Metal Doors and Frames	55	\$688.00	EA	\$37,840.00	6	\$688.00	EA	\$4,128.00	RSMeans
08 Doors and Windows	Aluminum Windows Large	55	\$975.00	EA	\$53,625.00	0	\$975.00	EA	\$0.00	RSMeans
	Doors and Windows Glazed Curtain Wall	550	\$86.50	SF	\$47,575.00	550	\$86.50	SF	\$47,575.00	RSMeans
	Finishes Interior Partition Walls	19,965	\$5.79	SF	\$115,597.35	1,000	\$5.79	SF	\$5,790.00	RSMeans
09 Finishes	Tile	2,000	\$10.55	SF	\$21,100.00	1,000	\$10.55	SF	\$10,550.00	RSMeans
	Finishes Flooring - VCT	2,000	\$4.75	SF	\$9,500.00	1,000	\$4.75	SF	\$4,750.00	RSMeans
	Finishes Paints and Coatings (Spray interior)	6,786	\$5.28	SF	\$35,830.08	10,343	\$0.43	SF	\$4,447.49	Recent Est.
	Specialties Toilet and Bath Specialties	2,000	\$1.18	SF	\$2,360.00	1,000	\$1.18	SF	\$1,180.00	Recent Est.
10 Equipment		Excluded				Excluded				None
11 Furnishings		Excluded				Excluded				None
12 Special Construction	Hazardous Material Remeidation	Excluded				Excluded				None
13 Conveying Devices	Elevators	0.25	\$155,000.00	EA	\$38,750.00	0.25	\$155,000.00	EA	\$38,750.00	Recent Est.
14 Fire Protection	SF Cost Allowance	14,230	\$7.25	SF	\$103,167.50	14,230	\$7.25	SF	\$103,167.50	Recent Est.
15 Plumbing	SF Cost Allowance	14,230	\$12.50	SF	\$177,875.00	14,230	\$12.50	SF	\$177,875.00	Recent Est.
	HVAC SF Cost Allowance	14,230	\$35.00	SF	\$498,050.00	14,230	\$35.00	SF	\$498,050.00	Recent Est.
16 Electrical	SF Cost Allowance	14,230	\$50.00	SF	\$711,500.00	14,230	\$50.00	SF	\$711,500.00	Recent Est.
<b>CONSTRUCTION COST</b>					<b>\$2,130,046.34</b>	<b>CONSTRUCTION COST</b>				<b>\$1,823,581.25</b>
<b>RES SF COST 14,230</b>					<b>\$149.69</b>	<b>COMM SF COST 14,230</b>				<b>\$128.15</b>





# Franklin Regional Council of Governments

## ***Overview of Property Development-Related Tax Credit Programs 2016***

There are a variety of state and federal programs available to assist with the financing of property development or redevelopment for economic purposes. These programs unitize a tool called “tax credits,” which allows a developer to lower the amount of taxes owed or raise capital for the project. For example, an awarded tax benefit can be sold to an investor or other entity for their use, which allows the developer to raise capital or equity for the development project. Tax credits are awarded through a competitive application process, and can be used individually or in combination for select projects. These programs offer effective tools to support development and redevelopment. However, they are also very complex. It is highly recommended that experienced, professional staff be consulted when attempting to utilize these programs.

Tax credit programs are recognized as key components for supporting redevelopment, particularly in real estate markets that may not be very competitive. A successful project in downtown Greenfield to encourage upper floor redevelopment brought together municipal officials, the Greenfield Redevelopment Authority, the Franklin County Regional Housing & Redevelopment Authority, local banks and property owners to explore tax credit opportunities. Through this effort, several property owners were successfully awarded tax credits to help fund redevelopment of key downtown structures.

### *New Market Tax Credits*

The U.S. Department of the Treasury operates a variety of programs to support access to capital for economic growth in targeted areas of households with low-incomes. One such program is the New Market Tax Credit Program operated through their Community Development Financial Institutions (CDFI) Fund. The CDFI Fund makes monetary awards and allocates federal tax credits to certified organizations, called Community Development Entities that can then issue New Market Tax Credits to developers for specified projects. To use these tax credits certain criteria must be met and the project must be located in an eligible, economically distressed Census Tract. The tax credit provided to the investor can total 39% of the cost of the investment and is to be claimed over a 7-year credit allowance period. According to the CDFI Fund website, there are six Franklin County towns identified with qualifying Census Tracts. Both Massachusetts Housing Investment Corporation (MHIC) and MassDevelopment. are Community Development Entities that have been allocated tax credit awards and have participated in projects in western Massachusetts.



Table: New Market Tax Credit (NMTC) Eligible Census Tracts in Franklin County, MA

County	Census Tract	Municipality (General Description of Location)	NMTC Eligible
Franklin	404	Erving, Warwick, Wendell	Yes
Franklin	405.01	Orange (Downtown and part of northwest area)	Yes
Franklin	405.02	Orange (North, east and south areas)	Yes
Franklin	407.01	Montague (Turners Falls area)	Yes
Franklin	413	Greenfield (downtown)	Yes
Franklin	414	Greenfield (between I-91 & Conway St and south)	Yes

Source: U.S. Department of Treasury, NMTC Public Viewer, 2016.

#### Links:

- U.S. Department of the Treasury’s Community Development Financial Institutions Fund - New Market Tax Credit Program: [www.cdfifund.gov/programs-training/Programs/new-markets-tax-credit/Pages/default.aspx](http://www.cdfifund.gov/programs-training/Programs/new-markets-tax-credit/Pages/default.aspx)
- Certified Community Development Entities/Community Development Financial Institutions that have been allocated New Market Tax Credits:
  - Massachusetts Housing Investment Corporation (MHIC) LLC – [www.mhic.com](http://www.mhic.com)  
Contact: Joseph Flatley, President & CEO, 617-850-1028, [flatly@mhic.com](mailto:flatly@mhic.com)
  - MassDevelopment New Markets, LLC – [www.massdevelopment.com](http://www.massdevelopment.com)  
Contact: Patricia Sluder, Senior Vice President – New Markets, 617-330-2090, [psluder@massdevelopment.com](mailto:psluder@massdevelopment.com)
  - Cooperative Fund of New England, Amherst, MA – <http://cooperativefund.org/>  
Contact: Rebecca Dunn, Executive Director, 800-818-7833, [rdunn@coopfund.coop](mailto:rdunn@coopfund.coop)

#### Historic Rehabilitation Tax Credits

Certain tax credit programs target the rehabilitation of properties recognized as historically significant. The revitalization of historic properties for economic use can be more expensive than other projects. The challenge is to make the property workable for today’s businesses, while also maintaining the historic character and quality of the structure. In some cases, these credits can make the difference between a costly building rehabilitation project being economically feasible or not. As a result, these tax credits help to save endangered properties and preserve character of a community. They also use existing infrastructure and can help to preserve open space by reducing the need to develop “greenfields.”

Both the federal government and the Commonwealth maintain historic rehabilitation tax credit programs. The Federal Historic Preservation Tax Incentives Program is administered by the U.S. Department of the Interior’s National Park Service and the U.S. Department of the Treasury. The tax incentives may be applied to costs incurred for renovation, restoration, and reconstruction of eligible buildings. Generally, the percentage of these costs that can be taken as a credit is 10% for buildings placed in service before 1936, and 20% for certified historic structures.

The Massachusetts Historic Rehabilitation Tax Credit Program is managed by the Massachusetts Historic Commission (MHC) under the Secretary of the Commonwealth. Under this program a certified rehabilitation project on an income-producing property is eligible to receive up to 20% of the cost of certified rehabilitation expenditures in state tax credits. There is an annual limit on the amount of tax credits available through the Commonwealth's program, so selection criteria is employed to ensure that funds are distributed to the projects that provide the most public benefit.

Links:

- U.S. Department of the Interior's National Park Service - Federal Historic Preservation Tax Incentives Program: [www.nps.gov/tps/tax-incentives.htm](http://www.nps.gov/tps/tax-incentives.htm)
- MA Secretary of the Commonwealth - Massachusetts Historic Rehabilitation Tax Credit: [www.sec.state.ma.us/mhc/mhctax/taxidx.htm](http://www.sec.state.ma.us/mhc/mhctax/taxidx.htm)

### *Brownfields Tax Credits*

Both the federal and state government offers programs to encourage "Brownfields" redevelopment. The U.S. Environmental Protection Agency administered the Brownfields Expensing Tax Incentive, established in 1997 and extended to cover eligible expenses through December 31, 2011. The program allows costs for environmental clean-up on properties located in certain targeted areas to be claimed as fully deductible business expenses in the year in which the costs are incurred or paid. Since Congress has not renewed this program, the incentive cannot be claimed for tax years after 2011.

The Massachusetts Department of Environmental Protection administers the state's Brownfields Tax Credit Program. This program allows a tax credit for eligible clean-up costs. Specifically, the program allows a state tax credit of up to 50% after clean-up is completed, and 25% for a clean-up that uses an Activity and Use Limitation (AUL) on the property. The program also allows for the tax credit to be transferred, sold or assigned to another eligible person or to a non-profit organization. It is important to note that the developer cannot be responsible for the contamination on site. The project must also be located within an economically distressed area, such as a state certified Economic Target Area. All Franklin County towns, with the exception of Shutesbury, are located within the Greater Franklin County Economic Target Area. The deadline for eligible clean-up costs has been extended to January 1, 2019.

Links:

- U.S. Environmental Protection Agency – Brownfields Expensing Tax Incentive Program: [www.epa.gov/brownfields/brownfields-tax-incentive](http://www.epa.gov/brownfields/brownfields-tax-incentive)
- MA Department of Environmental Protection - Brownfields Tax Credit Program: [www.mass.gov/eea/agencies/massdep/cleanup/programs/brownfields-tax-incentives.html](http://www.mass.gov/eea/agencies/massdep/cleanup/programs/brownfields-tax-incentives.html)

### *Economic Development Improvement Program*

Through the Massachusetts Economic Development Improvement Program (EDIP), the Commonwealth and local municipalities may negotiate tax incentives with private business that is developing property, depending if certain job creation and private investment criteria are met. The purpose of the EDIP is to stimulate business development, particularly in areas of economic distress, and to increase the overall economic development readiness of individual communities and the region. This is achieved by offering incentives that promote job creation and retention, attract new business investment, and encourage existing businesses to expand. The EDIP allows both a municipality and the Commonwealth to negotiate a tax incentive agreement with a private business that is expanding, renovating, relocating, or building new facilities and creating jobs within an Economic Opportunity Area (a targeted area designated for economic development). Under guidelines that went into effect on July 1, 2014, all cities and towns in Massachusetts may participate in this program.

For a business to participate it must demonstrate that the project will generate substantial sales outside of Massachusetts to receive the state's EDIP Investment Tax Credit. For a business to take advantage of the initiatives offered, their project must fit into one of the categories described below and be approved by the local municipal governing body (i.e. Town Meeting or Town Council) and the state's Economic Assistance Coordinating Council (EACC), as appropriate. The categories identified under the current guidelines are:

- *Expansion Projects*: a project that will result in full-time job creation and capital investment, substantial sales generated out of state, and will have a local tax exemption approved by the municipality;
- *Enhanced Expansion Projects*: a project that will result in a minimum employment growth of at least 100 new full-time jobs and capital investment, substantial sales generated out of state, and must be supported by the local municipality.
- *Manufacturing Retention & Job Growth Projects*: a project in a designated "Gateway City" that will result in a minimum of 25 new Massachusetts full-time manufacturing positions and/or retain 50 full-time manufacturing jobs, substantial sales generated out of state, and is supported by the municipality. (Note: There are no communities designated as a Gateway City in Franklin County.)
- *Job Creation Projects*: a project that will result in a minimum employment growth of at least 100 new full-time jobs and substantial sales generated out of state. Significant capital investment and support from the local municipality are not required.

Municipalities can offer an approved Certified Expansion Project a local real estate tax incentive, either a Special Tax Assessment (STA) or a Tax Increment Financing (TIF). The terms of the tax incentive are negotiated between the municipality and the business. A Special Tax Assessment (STA) is a five- to twenty-year program that applies to the entire assessed value of a parcel involved in the business. In the example of a five-year program, in year one, the tax is 0% of the existing and new assessed value of the real estate. In year two, up to 25% of the assessed value is taxed. In year three, up to 50% of the assessed value is taxed. In year four, up to 75% of the assessed value is taxed. And in year five and subsequent years, up to 100% of the assessed value is taxed. Tax Increment Financing (TIF) is a tax exemption plan based on a percentage of the value added through new construction or renovation for an agreed upon number of years (from

five to twenty years). The real estate taxes generated by the increased assessed value from new construction are allocated to general revenue or to payment of a betterment fee in lieu of real estates taxes to finance related infrastructure.

The EACC may offer to the Certified Expansion Project an Investment Tax Credit of up to 10% of eligible capital investment. For projects that do not meet the new guideline's standard for substantial sales outside of Massachusetts, the municipality may still choose to negotiate a local tax incentive; however, the project will not be able to access the state's Investment Tax Credit.

Link:

- MA Office of Business Development - Massachusetts Economic Development Improvement Program – [www.mass.gov/edip](http://www.mass.gov/edip)

#### Low Income Housing Tax Credit Program

The federal government also offers a tax credit program for residential development, which can be used for the housing portion of a mixed-use development that also has commercial activity. The Low Income Housing Tax Credit Program is administered through the U.S. Department of Housing and Urban and Development, in conjunction with the Department of the Treasury and the Department of Justice.

Link:

- U.S. Department of Housing and Urban and Development - Low Income Housing Tax Credit Program: [www.huduser.gov/portal/datasets/lihtc.html](http://www.huduser.gov/portal/datasets/lihtc.html)