A Plan to Preserve and Restore the St. Vrain Mill in Mora, NM

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WORKING DRAFT

Preface: The St. Vrain Mill Restoration Plan is intended to provide an overview to the work that has to be done to preserve and restore the Mill. The first iteration was in 2016, but as the restoration progressed, the Plan also became a report of our completed projects. **These are described in the bolded text.** And like most plans, they get changed as time passes, circumstances change, and funding becomes available, or not. The original Plan envisioned foundation stabilization, wall repair, gable repair, roof repair, and then numerous smaller projects in that order. However, two years ago, the NM Historic Preservation Division (HPD) architect advised that while the wall repair had to be done sometime, the gable repair was most critical because the damaged gables were not keeping out rain, wind and birds, all of which were damaging the building's interior. So our grant request to HPD was for the gable repair, which was done in 2019, while the wall repair awaits a significant grant before it gets done. Even though the major work needs tens of thousands of dollars to accomplish, there are many smaller tasks that can be done in steps and which much smaller donations can be effective. For instance, our window replacement was something we didn't plan on until later, but an "adopt a window" fundraiser found enough sponsors for us to do it this year. Similarly, the loading platform reconstruction, a very visible but "nice to do" project was made possible by donations specifically for the platform. While we are pursuing larger grants, we also are committed to doing as soon as possible many smaller projects, projects that are feasible with only a few thousand dollars.

About the Mill: "The St. Vrain Mill in Mora, New Mexico was built in 1864 by Ceran St. Vrain. The Mill is 50 feet by 40 feet. It is three stories high with the first two stories made of stone and the third story being wood siding. The stone for the mill is thought to have come from Watrous, New Mexico, a town about 30 miles east and 10 miles southeast of Fort Union. The mill stones were what was called French buhrstones and St. Vrain had purchased them in Wespoint, Kansas in 1850. Power was provided by water brought by a wooden trestle from the Mora River. The original wheel was likely wooden and built locally. The present wheel is metal." Adapted from "A Brief History of the St. Vrain Mill" by Ray Marchi, available at: http://www.moravalley.com/st_vrain_mill.html

The building itself is all that remains of the working mill as most of the significant equipment was removed decades ago. After restoration, the most practical end use appears to be a Mora Heritage Center which could take the form of historical displays and/or an arts and crafts outlet featuring local artists and craft persons on the first floor; possibly an arts teaching space on the second floor;, and a Mill artifacts museum on the third floor.

Note: Text in bold italics describes work that has been completed.

Acquisition: ***In 2013, the St Vrain Mill Preservation and Historical Foundation was formed with the specific purpose of buying and restoring the Mill. The Foundation is a non-profit Corporation registered in New Mexico with Federal 501 (c) (3) status. After a successful fund-raising campaign throughout 2014, the Foundation received title to the Mill on June 3, 2015.***

Stabilization, Restoration, and Adaptive Reuse:

It is important to note that the objective here is to create a useful building, not to recreate a historically accurate reproduction of the Mill at the time of its construction in 1864. Having said that, every attempt will be made to retain the building's character and appearance as much as possible.

Phase 1: Stabilization

Phase 1a: Architectural and Engineering/Structural Assessments

In May 2015, the Foundation received a grant from the New Mexico Historic Preservation Division for a Historic Structures Report (HSR). The HSR documents the historic aspects and architectural characteristics of the St Vrain Mill. In addition, the architects report provided an assessment of the feasibility of various potential end uses.

The Foundation contracted with Beverley Spears, Spears Horn Architects in Santa Fe, NM, to do the HSR. The work was completed in September 2015. The HSR is on the Foundations website, www.stvrainmill.org under "Reports and Studies."

In June 2015, the Foundation contracted with Engineering Analytics, Inc. of Raton, NM, to conduct a structural evaluation of the north foundation and wall. Funding for this project was from a $10,000 grant from the New Mexico Economic Development Department and a $5,000 grant from the National Trust for Historic Preservation

The focus was on the load bearing capability of the soil under the north wall. A bore hole was drilled about 12" from the northeast corner. Soil samples showed that the soil was primarily sand and water with no significant load bearing structures within a 20' depth.

Engineering Analytics evaluated several alternatives including use of micro-piles, helical piers, tensioning cables, and concluded the most practical and cost-effective solution was the use of permeation and compaction grouting. They also recommended the stabilization occur within two years since very little if any of the restoration phase could be completed without stabilizing the building. The complete report is available on the Foundations website, www.stvrainmill.org under "Reports and Studies."

Phase 1b: Foundation Stabilization

Priority: Urgent, Critical
Time Frame: Competed, January 2018
Cost: $95,000

This phase implemented the recommendations by Engineering Analytics for shoring up the foundation. Since almost all the significant repair work depends on a stable structure, the foundation had to be stabilized before any other work was undertaken. Engineering Analytics recommended a combination of permeation and compaction routing (See www.stvrainmil.org Reports Tab for a detailed explanation.

In August 2017, the Foundation signed a contract with Hayward Baker, Inc to do this work. To minimize costs, we agreed that the work could be done any time before March 31, 2018, at HBI's discretion. Engineering Analytics remained under contract to oversee the work and conduct testing.

The work was done in January 2018. Engineering Analytics Final Report is available on our website.

Phase 2: Structural (Gable and Wall) Repair

Priority: Urgent, Critical
Time Frame: Gables - Summer 2019; Walls – 2022-2023 depending on funding
Cost: Gables - $43,000; *Walls - $75,000-$80,000*

While the wall repair is the most important task, the most urgent was repair of the gables since they offered no protection against wind, rain and wild fowl intrusion. All three contributed to the deterioration of the interior walls and floors. Heeding the advice of both the New Mexico Historic Preservation Division (HPD) architect and the New Mexico Mainstreet architect, the Foundation moved to repair the gables as soon as possible and defer the wall repair.

Gable Repair: The north gables required a complete rebuild of both the frame and the some of the siding while the south gable needed only replacement siding. The Foundation contracted with Spears, Horne Architects to prepare the required architectural and construction drawings. After HPD approval (June 2019) of the architectural drawings, a contract was signed with Knutson Construction for the gable repairs. The work was completed in September 2019. Approximately one half of the total project was funded by HPD. Replacement of the third story windows was not part of the effort, however, the Foundation raised the funds to construct and install the four third story gable windows.

Wall Repair: There are two distinct steps in the St Vrain Mill wall repair – repointing the cracks in the east and west walls and replacing several missing blocks at the top of west wall. The stabilization grouting of January 2018 did not lift the north end of the building and did not contribute to closing of the large east and west wall cracks.

Given that the east and west wall cracks were part of the building's character for at least 100 years, the objective is not to recreate the building of 1864, but to tell the story of the building, and the cracks are part of the story. Even though Engineering Analytics has determined a grout composition that will match the appearance of the exiting joints, an exact visual match is not a requirement.

It appears that at least some the stone blocks that have fallen are still on site so acquiring new matching blocks should not be necessary. However, the lintels above the second-floor windows will need to be replaced during this work.

Phase 3: Windows, Floors, and Roof Repair

Priority: Necessary, but not immediate
Time frame: As soon as possible, depending on funding
Cost: On the order of $75,000

The original plan was to replace the windows and do the floor repairs once the stone walls were repaired. However, with the walls stabilized, much of the interior work could be done without repairing the walls. While some projects are more urgent or important than others, they need not be done in any particular order, but will be done as funds become available.

Due to a "Adopt a Window" fundraising effort in mid-2019, the Foundation raised sufficient funds to construct and install the first and second story windows, and to rebuild the loading platform at the South end of the Mill.

Windows: There are a total of 11 large windows on the first and second stories. All require replacement of glass and new sashes, but at least four will require a complete rebuild of the frame and lintel. The intention is to recreate the appearance of the original windows. Cost was on the order of $12,500 for all 11 windows. Installation of all but one window was completed in early 2021.

Loading Platform: The loading platform was not an essential repair, but it is a highly visible part of the building, and its reconstruction is an indication of the progress being made in the Mill's restoration. Directed donations covered the cost of the platform rebuild, which was completed in February 2020, at a cost of cost of $3,000. The rebuilt platform is an exact replica of the original, based on photographs and remnants of the original platform.

Handicap Access/Safety Code: Create American with Disabilities Act (ADA) compliant parking and access ramp at the south (front) end of the building. **Rebuild north (rear) door and exit steps, and build a walkway along north wall to provide for secondary/emergency egress. The**

steps and rear door were completed in summer of 2021. The Foundation received a grant from the National Society of the Daughters of the American Revolution (NSDAR) for approximately half of the cost of $10,600.

Lighting: With help of Extreme Power Electric (Michael Martinez), who donated much of the labor, and a grant from USDA Rural Development for material, lighting was installed on both the first and second floors. The first-floor lighting is complete with track lighting in place for illuminating future displays and exhibits, as well as all required emergency exit signs and illumination. The second floor has only general illumination at this time.

Floors: Currently, the intention is to replace the second story flooring in its entirety and use existing boards from the second story to replace boards on the first floor. Since this is a project that could be done with volunteer labor, it may be started at any time, dependent on funding. Estimated cost: $12,000 -$14,000, material only.

General interior Repairs: Install stair rails with period appearance, repair doors, etc. Estimated Cost: $7,500 -$10,000. Note there are many on-going small projects, most done by volunteer labor***. For example, volunteers built a walking path from the front of the Mill to the Historic Roadside marker installed by the NM Department of Transportation in 2018.*** Removing the paint and graffiti is a future project that can be done by Foundation members and volunteers.

Roof: The roof structure, especially the rafters, appears to be in good condition, but the metal panels have numerous small holes. The Foundation has already replaced missing metal panels so the roof overall is basically sound. The entire metal surface will need to be replaced before the third floor of the building can be used, but the first and second floors should be usable without roof repairs. The intent would be to use Cortan panels that will oxidize to a rusted appearance in a few years. Note that the original Mill had wooden shingles, but it appears that around 1913, the wooden shingles were replaced with metal panels.
Estimated Cost: $25,000

Phase 4: Adaptive Reuse Construction

Priority: Not immediate, but necessary for productive use
Time Frame: Most likely 2023 (first floor); 2023 - 2024 upper floors, depending on funding.
Cost: On the order of $50,000

There are several potential end-uses for the Mill. The actual use and layout will depend on the sentiment at the time the restoration phase is complete, three or more years into the future. There is no significant milling equipment left in the Mill, so a working Mill museum is not an option. Note that the opening of the Mill to the public can be done one floor at a time. At this time, the Foundation has a specific concept for the first floor only.

For planning purposes, the current concept is Mora “heritage center” focusing on Mora’s “generational families” on the first floor along with an arts and crafts outlet featuring local

artisans and producers. Providing heat/climate control could be the major expenses for this use. Handicap access will be in place.

The second floor with it natural lighting and open space could be used as gallery space or teaching area for both performing arts and as well as painting and other arts related skills. Again, lighting and heat would be required. If it were not generally open to the public, handicap access should not be required.

The third floor could be devoted to Mora's agricultural history and its relationship with Fort Union in the 1860s and 1870s. Two pieces of milling equipment remain in place and are restorable. Fort Union has agreed in principle to develop a display describing the Fort Union connection. Both lighting and heating requirements would be minimal. Handicap access would be a problem. However, given the historic nature of the building, alternatives may be acceptable. For instance, a complete video recording of the third-floor displays could be shown in a viewing booth on the first floor. Similar approaches have been accepted in other locations.

The Historic Structures Report, conducted by Spears, Horn Architects, addressed the issue of restroom facilities. They believe, if the end uses require public facilities, that a separate structure be constructed near Mill. A septic system may be required. It is possible if the building can be considered an annex to another facility within the Mora Arts and Cultural Compound (ACC), then public facilities may not be required.

Parking could become a significant limiting factor. If adjacent land for parking is not available, any parking for St Vrain Mill visitors would be within the ACC area, several hundred feet away.

Cost Estimate: (General, not based on specific design)

Electrical/Heating $50,000 – $75,000

Plumbing: Not addressed