

## Johnson Pearl / School Street Corridor Planning Feasibility Study Alternatives Matrix

March 2008, Revised July 2008

|  | Category   | Do Nothing | Alternative A          | Alternative B          | Alternative B1         |
|--|--|------------|------------------------|------------------------|------------------------|
| <b>Engineering Issues</b>              | Additional Easements / ROW Needed                | No         | Probably               | Yes                    | Yes                    |
|  | Utility Relocations Needed                       | No         | Not likely             | Possibly               | Possibly               |
|  | Bridge Crossing                                  | No         | Near Existing Bridge   | New Bridge             | 2 New Bridges          |
| <b>Estimated Construction Costs</b>    | Sidewalks  | \$0        | \$1,148,300            | \$1,407,000            | \$671,100              |
|  | Gravel Paths                                     | \$0        | \$102,300              | \$191,100              | \$317,400              |
|  | Bike Lanes/Shared Use Shoulders                  | \$0        | \$12,100               | \$0                    | \$0                    |
|  | Traffic Calming Elements: Curb Extensions        | \$0        | \$55,000               | \$70,000               | \$7,700                |
|  | Traffic Calming Elements: Speed Table            | \$0        | \$5,000                | \$0                    | \$0                    |
|  | Street Lights                                    | \$0        | \$38,500               | \$38,500               | \$44,000               |
|  | Street Trees                                     | \$0        | \$22,000               | \$20,500               | \$24,700               |
|  | Pedestrian Bridge                                | \$0        | \$99,000               | \$125,400              | \$220,000              |
|  | Pavement Markings                                | \$0        | \$10,120               | \$10,200               | \$47,900               |
|  | Retaining Wall                                   | \$0        | \$80,000               | \$0                    | \$65,300               |
|  | Design Engineering (20%)                         | \$0        | \$315,000              | \$373,000              | \$280,000              |
|  | Contingency (20%)                                | \$0        | \$378,000              | \$448,000              | \$336,000              |
|  | <b>TOTAL</b>                                     | <b>\$0</b> | <b>\$2,266,000</b>     | <b>\$2,684,000</b>     | <b>\$2,015,000</b>     |
| <b>Resource Impacts</b>                | Wetlands   | None       | Possibly - School St.  | Probably - New Bridge  | Probably - New Bridge  |
|  | Floodplains                                      | None       | Probably               | Probably               | Probably               |
|  | Fish & Wildlife                                  | None       | None                   | None                   | None                   |
|  | Rare, Threatened & Endangered Species            | None       | None                   | None                   | None                   |
|  | 4(f) Public Lands                                | None       | Possibly               | Possibly               | Possibly               |
|  | 6(f) LWCF Lands                                  | None       | Possibly               | Possibly               | Possibly               |
|  | Hazardous Waste Sites/Materials                  | None       | None                   | None                   | None                   |
|  | Historic Structures                              | None       | Yes - Bridge           | Yes                    | Yes                    |
|  | Archaeological Resources                         | None       | Possibly               | Possibly               | Possibly               |
|  | Agricultural Lands                               | None       | Possibly - outside ROW | Possibly - outside ROW | Possibly - outside ROW |
| <b>Local and Regional Issues</b>       | Satisfies Purpose & Need                         | No         | Yes                    | Yes                    | Yes                    |
|  | Meets Local Concerns                             | No         | Yes                    | Yes                    | Yes                    |
|  | Aesthetics                                       | Unchanged  | Improved               | Improved               | Improved               |
|  | Transportation / Community Character             | Unchanged  | Improved               | Improved               | Improved               |
|  | Economic Impacts                                 | Yes        | Enhancement            | Enhancement            | Enhancement            |
|  | Landowner Concerns                               | Yes        | Yes                    | Yes                    | Possibly               |
| <b>Required Permits and Clearances</b> | Stormwater Discharge Permit                      | No         | Possibly               | Possibly               | Possibly               |
|  | Erosion Prevention & Sediment Control Permit     | No         | Possibly               | Possibly               | Possibly               |
|  | Act 250  | No         | Possibly               | Possibly               | Possibly               |
|  | 401 Water Quality                                | No         | Yes                    | Yes                    | Yes                    |
|  | Stream Alteration Permit                         | No         | Yes                    | Yes                    | Yes                    |
|  | 404 COE General Permit (Army Corps of Engineers) | No         | Possibly               | Possibly               | Possibly               |
|  | Lakes & Ponds                                    | No         | Not applicable         | Not applicable         | Not applicable         |
|  | State Conditional Use Determination (wetlands)   | No         | Possibly               | Possibly               | Possibly               |
|  | Rare, Threatened & Endangered Species            | No         | None                   | None                   | None                   |
|  | Agricultural Soils Clearance                     | No         | Possibly               | Possibly               | Possibly               |
|  | Americans with Disabilities Act Compliance       | No         | Yes                    | Yes                    | Yes                    |
|  | State Historic Preservation Officer Clearance    | No         | Yes                    | Not likely             | Yes                    |
|  | VTrans Highway Access Permit                     | No         | Yes                    | Yes                    | Yes                    |
| <b>Other</b>                           | Maintenance Costs / Concerns                     | Yes - High | Medium - New Sidewalks | High - New Sidewalks   | Medium - New Sidewalks |
|  |  |            |                        |                        |                        |



## XI. PREFERRED ALTERNATIVE

### Alternatives Review and Selection

An Alternatives Presentation Meeting was held on March 11, 2008, where we reviewed the alternative segments described above. Working with the Planning Commission, the Community Economic Development Coordinator and the public, Alternative B1 was selected. Appendix K includes the Alternatives Presentation Meeting notes and Appendix L includes the Preferred Alternative B1 Plans.

### Selected Alternative B1

The selected features of the Preferred Alternative B1 plan reflect a combination of Alternatives A and B. Input from Johnson State College, the Elementary School, Vermont Studio Center, various local committees: the Planning Commission and Village Trustees, residents and landowners helped to shape this plan.

The attributes of the Preferred Alternative B1 are outlined below.

- New 5 feet wide sidewalks with curbs and 5 feet wide green strips are proposed on the east side of Pearl Street and Clay Hill Road. New curbing and 3 to 5 feet wide green strips are also proposed where new sidewalks will be constructed as part of the Pearl Street Bridge upgrade project on the west and east sides of Pearl Street. Adding in the curbing and green strips will narrow Pearl Street to approximately 22 feet: the same width north of the School Street intersection. These new sidewalks and green strips are intended to connect with new sidewalks and crosswalks to be constructed as

part of the Pearl Street Bridge upgrade project. There should be further discussion and coordination with VTrans on the Pearl Street Bridge project to incorporate these proposed improvements.

- Improved green strips with low curbing on east and west sides of Clay Hill Road to direct the stormwater runoff to a new stormwater system.
- New storm drainage improvements along Pearl Street, lower Clay Hill Road and School Street to direct stormwater away from buildings and driveways. This may require several storm drainage systems that use catch basins and piping and outfall off site to help dissipate the runoff quickly. These systems could possibly take advantage of new stormwater technologies to help the runoff infiltrate back into the ground quickly such as rain gardens, bioretention areas, or green soaker strips.
- Upgrade the existing sidewalk to a new 5 feet wide sidewalk, curbing and 5 feet wide green strip on the east side of lower Clay Hill Road.
- Redefine Pearl Street/School Street intersection with new curb extensions and green strips, street lights and crosswalks to offer pedestrians increased protection at this busy location. This redefined intersection will still be able to accommodate buses and delivery vehicles with its new layout.
- Two groupings of street trees along Clay Hill Road to function as traffic calming elements by visually narrowing the roadway.
- 'Share the Road' and 'Village Ahead - Please Yield to Pedestrians and Bicyclists' signs for pedestrian and bicycle use for Clay Hill Road and Route 100C associated with the street tree groupings.



- A new 4 feet wide gravel path on the west side of Clay Hill Road from Crab Tree Lane to Gould Hill Road. This path will be separated from the roadway with a green strip where possible.
- A new 4 feet wide gravel path connecting Johnson State College near the Dibden Art Center, Clay Hill Road and College Hill Road.
- Curb extensions along School Street at the College Hill Road intersection, at the school driveway entrance, and at crosswalks. The curb extensions are designed to provide a safe refuge spot for pedestrians crossing School Street.
- Reconfigured school drop off area and 8 feet wide sidewalk on School Street reducing down to a new 5 feet wide sidewalk on north side of School Street along southern edge of the school playground. The bank between the school playground and the new sidewalk will need to be regraded and may require a retaining wall.
- Two solar radar speed flashing feedback signs on School Street when school is in session.
- A new 5 feet wide sidewalk along the western side of the Elementary School driveway that will extend to the diagonal parking area behind the School building and will connect with College Hill Road. There will need to be regrading work behind the parking area and possibly a retaining wall at the eastern end of this new sidewalk.
- A new 5 feet wide painted sidewalk from College Hill Road to the Elementary School entrance that will cross behind an existing parking area.
- Restriped on street parking spaces, street trees and street lights along School Street extending just beyond the College Hill Road intersection.
- New 5 feet wide sidewalk and curb on east side of College Hill Road connecting the Elementary School parking lot with the school entrance.
- New 5 feet wide sidewalk on south side of School Street extending from the former Electric Coop property to Route 100C with a new 6 feet wide pedestrian bridge next to the Power House covered bridge.
- New 5 feet wide gravel path leading from School Street to the swimming hole on the Gihon River.
- Redefined School Street/Route 100C intersection to a 24 feet two lane width to accommodate the reconfigured pull off area just before the Power House covered bridge.
- A new 5 feet wide sidewalk starting at the former Electric Coop property leading south to a new single span 6 feet wide pedestrian bridge crossing the Gihon River and connecting with a new sidewalk extending to Route 100C/Stearns Street. The sidewalks on both sides of the new bridge may need to be boardwalks to lessen wetland impacts.
- A new 5 feet wide sidewalk on the western side of Route 100C starting east of the new sidewalk associated with the new bridge and extending to the Main Street intersection to connect with an existing sidewalk. This sidewalk location should be coordinated with the Main Street Streetscape Project that will be realigning the intersection and existing sidewalk.
- A grouping of street trees to function as traffic calming elements by visually narrowing the roadway on Route 100C. In order to have these trees make an effect on slowing vehicle speeds, they should be near the roadway pavement. To



do this on a state highway, there should be curbing at the edge of the shared use shoulder.

- New 5 feet wide sidewalk with a 3 to 5 feet wide green strip, where possible, on the east side of Route 100C from the School Street intersection to connect with the existing sidewalk. A new retaining wall will be needed near the existing wall to accommodate this sidewalk.

The proposed gravel paths are outside of existing road ROWs and permanent easements will need to be obtained from the property owners. There have been initial discussions with Johnson State College administrators and they are supportive of path and sidewalk connections between their campus and the village. There will need to be further discussions with property owners at the next phase of design.

While most of the proposed improvements are shown within the existing road ROWs, there may be areas where temporary construction or permanent easements may be needed. These should be further investigated as the project moves into the next design phase.

During the next phase of design development, further refinement of these proposed elements will need to be done once a survey is complete and the location of the existing ROWs has been determined.

## **XII. RECOMMENDED PHASING/ PROJECT TIME LINE**

Because of the size and magnitude of this project, it is recommended to phase its construction.

Coordination with other projects could help reduce some of the costs due to economies of scale.

The Pearl Street Bridge Upgrade project is within the project area and is currently in the final design phase with construction expected in 2009. It would be beneficial to coordinate the proposed improvements along Pearl Street with this project.

The Preferred Alternative B1 Plan have been divided into six overall phases with consideration given to logical construction boundaries. The recommended phases are as follows.

### ***Phase A***

Phase A is broken down into five sub-phases in order to coordinate with the Pearl Street Bridge upgrade project and include the street tree grouping traffic calming elements together.

#### ***Phase A1***

Phase A1 includes the following elements:

- A new 5 feet wide sidewalk with curbing and 3 to 5 feet wide green strips on the east side of Pearl Street starting at the Pearl Street Bridge project and extending to include the curb extension at the School Street intersection; and
- New street lights.

It is envisioned that this phase could be done in conjunction with the Pearl Street Bridge upgrade project.

#### ***Phase A2***

This phase includes the proposed improvements by the Elementary School and a portion of School Street and includes the following elements:





- New 5 feet sidewalk and curb on the south side of School Street bordering the former Vermont Electric Coop property,
  - Reconfigured school drop off area and 8 feet wide sidewalk on School Street reducing down to a new 5 feet wide sidewalk along southern edge of the school playground,
  - Two solar radar speed flashing feedback signs on School Street,
  - Restriped on street parking spaces, new street trees and street lights along School Street to extend to the College Hill Road intersection,
  - New storm drainage improvements along School Street, and
  - Curb extensions along School Street at the Elementary School driveway entrance and at crosswalks.
- New 5 feet wide sidewalks with curbs and 5 feet wide green strips on the east side of Pearl Street and Clay Hill Road. New curbing and 3 to 5 feet wide green strips where new sidewalks will be constructed as part of the Pearl Street Bridge upgrade project on the west side of Pearl Street,
  - Improved green strips with low curbing on east and west sides of lower Clay Hill Road,
  - New storm drainage improvements along Pearl Street and lower Clay Hill Road,
  - Upgrade of the existing sidewalk to a new 5 feet wide sidewalk, curbing and 5 feet wide green strip on the east side of lower Clay Hill Road, and
  - Redefined Pearl/School Street intersection with new curb extensions and green strips, street lights and crosswalks.

#### *Phase A3*

This phase includes College Hill Road improvements and consist of the following:

- Curb extensions and crosswalks at the College Hill Road / School Street intersection,
- New 5 feet wide sidewalk and curb on east side of College Hill Road connecting School Street with the Elementary School parking lot with the school entrance,
- New 5 feet wide painted sidewalk from College Hill Road to the Elementary School entrance, and
- New street trees along School Street from the College Hill intersection east.

#### *Phase A4*

Phase A4 includes the remaining proposed improvements along Pearl Street and lower Clay Hill Road and includes the following elements:

#### *Phase A5*

This phase the proposed traffic calming measures along Clay Hill Road and Route 100C includes the following:

- Street tree groupings along Clay Hill Road and Route 100C;
- Redefined parking area off of Route 100C and School Street; and
- 'Share the Road' and 'Village Ahead - Please Yield to Pedestrians and Bicyclists' signs for pedestrian and bicycle use for Clay Hill Road and Route 100C.

#### *Phase B*

Phase B includes the new 5 feet wide sidewalk on south side of School Street extending from the former Vermont Electric Coop property to Route



100C with a new 6 feet wide pedestrian bridge next to the Power House covered bridge.

### ***Phase C***

Phase C is broken down into three phases and includes the proposed gravel paths and the remaining Elementary School improvements.

#### ***Phase C1***

This phase is comprised of a new 4 feet wide gravel path connecting Johnson State College near the Dibden Art Center, Clay Hill Road and College Hill Road.

#### ***Phase C2***

This phase include the remaining improvements associated with the Elementary School not included in Phase A2:

- A new 5 feet wide sidewalk along the western side of the Elementary School driveway that will extend to the Laraway Youth and Family Services building and continue east to the diagonal parking area behind the School building and connect with College Hill Road. This sidewalk will most likely need to include a retaining wall; and
- A new 5 feet wide painted sidewalk from College Hill Road to the Elementary School entrance that will cross behind an existing parking area.

#### ***Phase C3***

This phase is for the new 4 feet wide gravel path leading from School Street to the existing swimming hole on the Gihon River.

### ***Phase D***

Phase D includes a new 5 feet wide sidewalk with a 3 to 5 feet wide green strip and retaining wall on the east side of Route 100C that extends from the School Street intersection to the existing sidewalk.

### ***Phase E***

Phase E includes the sidewalk and pedestrian bridge connection from School Street to Route 100C via the former Vermont Electric Coop property. Because of the estimated cost of the new pedestrian bridge, this phase was broken down into two sub phases.

#### ***Phase E1***

Phase E1 incorporates the new 5 feet wide sidewalk on the west side of Route 100C only.

#### ***Phase E2***

Phase E2 includes the new 5 feet wide sidewalk and 6 feet wide pedestrian bridge over the Gihon River from School Street by the former Vermont Electric Coop property to Route 100C. Portions of this sidewalk may need to be a boardwalk to limit wetlands impacts.

### ***Phase F***

Phase F includes a new 4 feet wide gravel path on west side of Clay Hill Road from Crab Tree Lane to Gould Hill Road. This path should be separated from the road with a green strip where possible.

The advantage of creating the various phases is to assist the Town/Village with determining affordable segments to move forward to design and construct. If different consultants prepare the design plans for each phase, there will be additional



expenses associated with them becoming familiar with the project. In addition, several state and federal agencies will require the entire project be permitted at the same time: wetlands impacts is one such area.

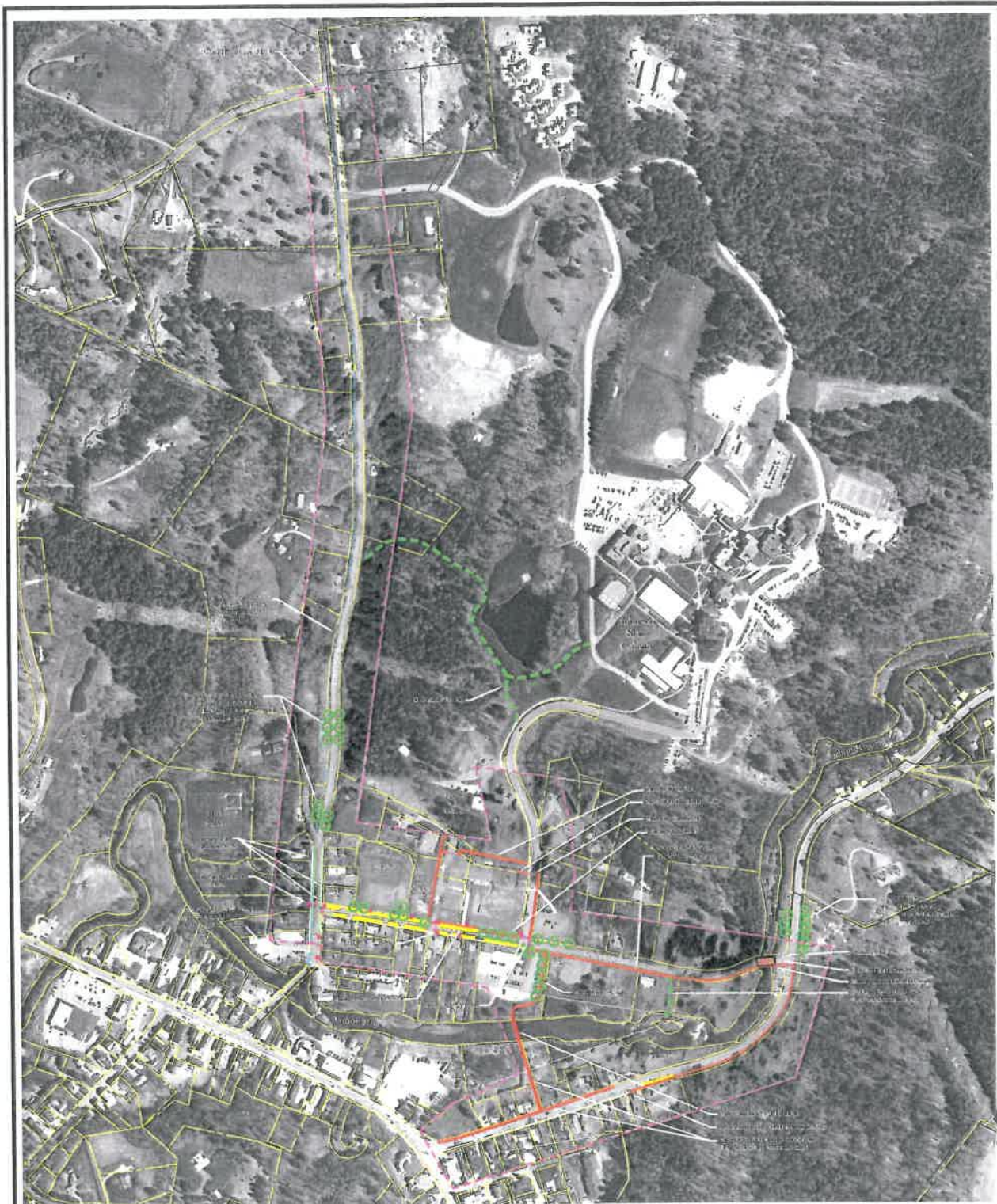
A potential time line for a phase from design development through to construction is shown in Table 3.

### **XIII. CONCEPTUAL ESTIMATE OF PROBABLE COSTS**

Conceptual Estimates of Probable Costs has been broken down into the six phases and additional sub phases that coordinate with the recommended phasing schedule above. See Tables 4 through 18.







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|---|--|
| This plan shall only be used for the purposes described herein.<br><input type="checkbox"/> Mark & Control <input type="checkbox"/> As Shown<br><input type="checkbox"/> Prohibit <input type="checkbox"/> Comply<br><input type="checkbox"/> Encourage <input type="checkbox"/> Restrict |  |
| <b>Johnson Pearl/School Street<br/>Feasibility Study</b><br>Johnson, Vermont  |  |
| <b>Alternative B1</b>   |  |
|   |  |
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