Presque Isle Downtown Transportation Planning Study

May 23, 2012

Prepared by

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GP Gorrill-Palmer Consulting Engineers, Inc.
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Study Purpose

The consulting team was retained in August of 2011 to analyze options for changing vehicular traffic flow in downtown Presque Isle to:

1. Improve the pedestrian experience.
2. Enhance the value of existing businesses and attractions.
3. Alter land use patterns to attract and support new investment.
4. Accommodate the location of a new community center.

The study was to consider existing traffic constraints such as the rail line, which runs through the downtown parallel to Main Street and the Presque Isle Stream which channels traffic across the State Street and Park Street Bridges. The study was to examine alternative downtown traffic patterns with reference to the proposed North-South Highway through Presque Isle to understand what effect, if any, that highway would have on the options studied for the downtown.

After consultation with the City the study area was defined to run along Main Street from the northern border of the University of Maine campus to Allen Street and be bounded on the west by the Presque Isle Stream and on the East by Second Street. Ultimately, the concepts explored most intensely involved the area from Chapman Street to Allen Street. A focus was given to those options which would reduce the number of left turn movements and in particular those associated with Main and State Streets and Main and Academy Streets.

Another focus of the study was to consider the lands now owned by the City in proximity to the downtown that could be redeveloped. Presque Isle happens to be in a unique position to have a substantial land holding that is owned by the City in the downtown that is clear and ready for development.

The final consideration that influenced the study was the knowledge that Presque Isle serves as Aroostook County’s premier service center for jobs, commerce and services. This positioning of the City is a considerable asset that should be maximized.

Study Process

The study began with an orientation for the study team. The team was fortunate to have Jan Murchison of Sewall Company and Tim Roix of B. R. Smith as participants since both were familiar with the past planning activities of the community and Jan Murchison was a participant in the Presque Isle Downtown Revitalization Committee. An orientation meeting was held with City staff on August 4, 2011 followed by a tour of the downtown with interested community stakeholders. The team apprised themselves of City planning documents including the 2007 Comprehensive Plan, the 2008 Downtown Master Plan, the 2009 report of the Maine Downtown Center and the strategic plan that was unfolding concurrent to the study.
On August 16, 2011 team leader John Melrose returned to Presque Isle to meet with City staff and MaineDOT Deputy Commissioner, Bruce Van Note and Rail Planner Nate Moulton to discuss planning restrictions involving the former Montreal, Maine and Atlantic rail line now owned by the State and running through the downtown. Consultations also occurred with MaineDOT to verify the conditions of the State Street and Park Street Bridges. The most important consultations with the Department involved the consideration of traffic alternatives pertaining to state highways, notably State Street (Route 163), Main Street (Route 1) and Academy Street (Route 10).

With the study purpose in mind the team considered a number of alternatives including making no changes, using one way north-south streets, extending Riverside Drive to the south to connect with Main Street north of UMPI, terminating Academy Street at a T intersection with Second Street which would extend Main Street opposite Chapman Street, realigning Academy Street to connect at Main Street opposite Chapman Street and extending Second Street to the north to connect with Allen Street. Of all of these options the one which realigned Academy Street to intersect Main Street opposite Chapman advanced for further study and public consideration. This option was acceptable to MaineDOT from both a traffic management perspective and also from the perspective of the rail impacts.

On November 17, 2011 two lively and very well attended public participation sessions were held to explain the study purpose, process and findings to date and receive public input. Public input from these sessions resulted in the City leading a dialogue from December into March that involved the Council, Planning Board and the Downtown Committee. That dialogue led to the exploration of alternative traffic management changes noted in a March 12, 2012 memo from the City Manager to the City Council. A consensus was reached by these three City bodies to direct the study team to model the results of three options: 1) do nothing and maintain the status quo, 2) extend Academy Street across Main Street at 90 degrees, across the rail and connect it to a realigned Riverside Drive brought adjacent to the rail and connecting to State Street at the Bridge with the existing Chapman Street crossing of the rail eliminated and 3) transforming existing Main Street to two through lanes plus dedicated turning and queuing lanes the length of the study area. These three options were to be analyzed in three ways 1) assume no-building of the Presque Isle North-South Highway, 2) assume only the building of the Conant Road to Route 163/167 section and 3) assuming building of the entire Presque Isle segment.

**Existing Conditions**

The City of Presque Isle downtown has several noteworthy features from a traffic management perspective. First, Route 1 traveling through the center of the downtown on a north-south orientation is a high volume route reaching a peak of roughly 18,000 vehicles per day on the north end of the study area. This would be the highest volume in the County and is a volume that in southern Maine would stimulate action on a by-pass as has occurred in Gray and is under consideration in Gorham. Compounding the traffic management demands of this high volume National Highway System (NHS) route is a downtown that also accommodates four east-west state routes and a typical grid of side streets all spawning left turn movements that impede traffic flow, require four signalized intersections and justify a pedestrian unfriendly four lanes of traffic. Truck routes run through the center of the City and require extra accommodation for their turning movements.
Other notable features of downtown existing conditions include:

1. The downtown is configured along the north-south line of Route 1 bounded generally one block to the east by Second Street where residential uses begin and on the west by the Presque Isle Stream except at the State Street Bridge where commercial development extends to the west.

2. The Maine Downtown Center observed that the Downtown should build out more to the west to increase the density of the core business district and add destinations within walking distance of each other thereby enhancing the overall viability of the downtown.

3. The amount of cleared land ready for development and owned by the City west of Main Street, offers the community a “do over” opportunity uncommon to Maine downtowns.

4. The Presque Isle Stream offers an attractive amenity to incorporate into the design and build out of the downtown.

5. A rail line runs in a north-south orientation through the downtown. MaineDOT and rail operators oppose the addition of new crossings. A swap of one crossing for another is acceptable in the instance of Presque Isle’s downtown and is even better if it involves moving a crossing away from a switching yard or eliminating two crossings with the creation of a new crossing. MaineDOT may be supportive financially when a change in rail crossings promotes public safety.

6. The rail switching yard and wye cannot be obstructed. MaineDOT seeks to preserve the current configuration for now while the new rail operator builds out the service.

7. The State Street Bridge carries roughly 10,000 vehicles a day on average including about 500 trucks. The superstructure and substructure are in “very good” condition and the deck is in “satisfactory condition” all according to recent MaineDOT bridge inspection reports. If the bridge was in poor condition and ready for replacement, a new location might better accommodate downtown traffic management needs. A replacement is at least 20 years away and likely much more than that.

8. The Park Street Bridge carries half the volume of vehicles and trucks as the State Street Bridge. It is in “very good” and “good” condition for its components. It was built in 2003 and as such will likely not be replaced for forty or more years.

9. As the premier service center for the Aroostook County region, Presque Isle has the audience. Through downtown development it needs to cultivate and appeal to that audience.

10. The downtown is also blessed with the walking proximity of residential neighborhoods and the adjacent location of the University of Presque Isle.

Alternatives Analysis

As described previously in the Study Process section of this summary, the City Council, Planning Board and Downtown Committee reached a consensus that three alternatives should be analyzed and that those alternatives should be measured for effectiveness in relation to the proposed North-South Highway.

The proposed North-South Highway is designed to relieve through traffic and in particular truck traffic that is presently traveling on downtown streets. Nevertheless, downtown streets will still need to accommodate trucks serving the center of the community. Furthermore, while the proposed highway will reduce significant through traffic, the changes in volumes along Main Street based on information provided by MaineDOT with the full Highway constructed would still leave through
Main Street volumes at 80% of current levels in the study area. If only the Conant Road to Maysville section of the proposed Highway was built, the forecast is that 88% of current through volumes would remain on Main Street. While these reductions may seem small it is worth noting that business districts are generally well served by removing through traffic that is disinterested in stopping to conduct commerce. This action enhances the experience, access and attraction for those who wish to conduct business in the downtown.

As requested by the City, capacity analyses were completed for the Main Street corridor in downtown Presque Isle. The analyses were based upon the following nine alternatives:

- Alt 1: Existing roadway configuration without Bypass
- Alt 2: Existing roadway configuration with full construction of Bypass
- Alt 3: Existing roadway configuration with partial Bypass (Maysville to Conant Roads only)
- Alt 4: Three-lanes on Main St. without Bypass
- Alt 5: Three-lanes on Main St. with full construction of Bypass
- Alt 6: Three-lanes on Main St. with partial Bypass (Maysville to Conant Roads only)
- Alt 7: Three-lanes on Main St. with Academy extension without Bypass
- Alt 8: Three-lanes on Main St. with Academy extension and full construction of Bypass
- Alt 9: Three-lanes on Main St. with Academy extension and partial Bypass (Maysville to Conant Roads only)

The analysis for Alternatives 1 through 3 was completed with the existing four-lane section along Main Street, while the analysis for Alternatives 4 through 9 was completed with Main Street as a three-lane section (i.e. one travel lane in each direction and a center turn lane). This conversion of a road like Main Street is referred to at times as a “road diet” with the benefits described as follows:

A “road diet” entails converting a four-lane undivided roadway to a two-lane roadway plus a two-way left turn lane by removing a travel lane in each direction. The remaining roadway width can be converted to bike lanes, on-street parking or sidewalks. In cities throughout the world, roadways have been put on “road diets,” and these improvements have generated benefits to all modes of transportation including transit, bicyclists, pedestrians and motorists. These benefits include reduced vehicle speeds, improved mobility and access, reduced collisions and injuries, and improved livability and quality of life. (Source: Road Diet Handbook – Overview, 2006, Jennifer A. Roasales, P.E., PB Placemaking, Portland, OR.)

Gorill-Palmer Consulting Engineers completed an analysis of Main Street from Chapman Street to North Street for the PM peak hour utilizing the Synchro and SimTraffic software. The level of service (LOS) results for five Main Street intersections are summarized in the following tables. LOS ratings are comparable to academic grades with “A” being superior traffic flow performance on down to “F” representing failure.
Main Street at Chapman Road

Alternatives 1 through 6 have this intersection as signalized, with a connection back to Riverside. Alternatives 7 through 9 have Chapman Road truncated to the east of the railroad crossing, with traffic rerouted to an extended Academy Street.

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<th>Alt 8*</th>
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<tbody>
<tr>
<td>Chapman EB</td>
<td>C</td>
<td>B</td>
<td>C</td>
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<td>C</td>
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<td>C</td>
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<td>Main NB</td>
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<td>A</td>
<td>F</td>
<td>B</td>
<td>D</td>
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<td>Overall</td>
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<td>N/A</td>
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</table>

*Note: This intersection is unsignalized for Alternatives 7 through 9.

Based on the analysis, this intersection currently operates without significant delay. If Main Street was converted to a three-lane section, Main Street northbound would operate with significant delay (LOS F) until the Bypass was built.

If Chapman Street through traffic were relocated to an extended Academy Street, Main Street northbound and southbound traffic would enjoy service comparable to existing superior conditions but it would do so with the added benefit of not having the existing traffic light at the Chapman intersection. The much reduced traffic using Chapman would operate with delay that would be typical of an unsignalized side street exiting onto a busy arterial. This traffic would have alternative routes including the Academy Street extension. Further consideration should be given to the ultimate need for the Chapman Street connection to Main Street under this scenario. The part of the Chapman Street footprint closest to Main Street could be set aside for green space to create a pocket amenity for pedestrians and enhance the visual contribution of the adjacent church to the downtown setting.

Main Street at Academy Street

Alternatives 1 through 6 modeled this intersection as having three approaches. Alternatives 7 through 9 were modeled as a four-approach intersection, as Academy Street is proposed for an extension to the west in these scenarios.

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<tbody>
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<td>Academy EB</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>Academy WB</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>F</td>
<td>D</td>
<td>D</td>
<td>E</td>
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<td>Main NB</td>
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<td>Main SB</td>
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<td>Overall</td>
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</tbody>
</table>
Based on the analysis, this intersection currently operates without significant delay. If Main Street were converted to a three-lane section, it would operate with significant delay for Academy Street westbound until the Bypass occurred. If the intersection were converted to a four-way configuration as part of an Academy Street extension, the westbound Academy Street approach would still continue to experience some delay until the first phases of the Bypass were constructed. For northbound and southbound Main Street traffic, the Academy Street extension option level of service compares most favorably to the existing configuration.

**Main Street at State Street**

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<td>C</td>
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<td>C</td>
<td>D</td>
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<tr>
<td>State WB</td>
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</tr>
</tbody>
</table>

Based on the analysis, this intersection currently operates without significant delay. It appears that all approaches would operate at an acceptable level of service for all alternatives. While there is an overall vehicular delay for the three-lane configuration, this is clearly the tradeoff to consider in providing a configuration from Chapman Street to Park Street that would enhance pedestrian safety and positive perceptions of the accessibility of the downtown due to the narrowing of Main Street and likely reductions in vehicular speeds.

**Main Street at Park Street and Allen Street**

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<tbody>
<tr>
<td>Park EB</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
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<td>Allen WB</td>
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</table>

Based on the analysis, this intersection currently operates without significant delay. It appears that all approaches would operate at an acceptable level of service for all Alternatives. The overall vehicular delay for the three-lane configuration would be comparable to the current configuration for southbound Main Street traffic once the first phases of the Bypass were constructed.
Main Street at North Street

LOS Results for Main Street at North Street

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<tbody>
<tr>
<td>North WB</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>C</td>
<td>C</td>
<td>C</td>
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<td>Main NB</td>
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<td>Main SB</td>
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Based on the analysis, this intersection currently operates without significant delay. It appears that all approaches would operate at an acceptable level of service for all alternatives.

Summary

If it was the City’s objective to move vehicles along Main Street through the downtown as unencumbered as possible this analysis reveals that the status quo is a competitive option. However, based on the purpose of this study, the City’s objectives as stated previously are as follows:

1. Improve the pedestrian experience.
2. Enhance the value of existing businesses and attractions.
3. Alter land use patterns to attract and support new investment.
4. Accommodate the location of a new community center.

The City is best able to advance these objectives with the Academy Street extension option, which is anticipated to only slightly compromise traffic flow on Main Street even if the bypass is not built at all. The construction of the proposed bypass either partially or fully offers some beneficial impact to downtown traffic flows but the anticipated benefit is not dramatic.

There is a more noteworthy overall compromise to traffic flow on the side streets of Main and Academy by instituting the three lane configuration. However, this diminishment of flow is not viewed as serious and is more than offset by the other gains to be realized. The move to a three lane configuration on Main Street enhances pedestrian safety and perceptions of ease of accessibility. This is simply due to the narrowing of the crossing of Main Street and the likely reduction of vehicle speeds this configuration is expected to generate.

The Academy Street extension option has the added benefit of creating a pedestrian crossing of the railroad tracks more proximate to the downtown also connecting pedestrians to the amenities of the Stream and the proposed community center.

The Academy Street extension supports the recommendation of the Maine Downtown Center for Presque Isle’s downtown by building out the depth of the downtown beyond Main Street moving more toward a grid and away from a linear pattern. This option should also improve access to parking west of Main Street between Chapman and State Streets.

As mentioned previously, future refinements to the downtown plan, if using the Academy Street option, should consider a pedestrian mini park where Chapman now connects to Main Street. Similar consideration should be given to the space now occupied by the access to parking on the
west side of Main Street between State and Chapman Streets if this is viewed as redundant once Academy connects to the same parking area a short distance away. Eliminating these two access points to Main Street to create pedestrian amenities would likely also improve traffic flow and parking.

The obvious negative to extending Academy Street is that it impacts existing businesses and private property. It does not appear to impact national register eligible historic properties as earlier concepts involved. Nevertheless, a negotiated approach is encouraged and the City should consider the many apparent options available for relocation including onto current property held by the City west of the rail tracks to spur the build out of the downtown.

As the community analyzes the options it is suggested that it focus its attention on comparing the status quo with the option of the Academy Street extension. The three lane only configuration is not a strong contender. It is further suggested that the comparative analysis set aside the prospect of whether the bypass will be built in whole or in part. It does not offer that great a consideration to warrant the complexity it adds to the analysis.

To assess the pros and cons of these two suggested options, the following measures might be applied to rank the options. These measures arose through the public dialogue and are offered in no particular order.

1. Economic growth potential – catalyst for development
2. Pedestrian and vehicular safety
3. Pedestrian and vehicular access to businesses
4. Aesthetics and amenities
5. Public support
6. Ease of implementation – regulatory hurdles, financing, property transactions
7. Consistency with prior plans
8. Tax base enhancement
9. Historic preservation
10. Support for proposed community center investment

The Study Team remains available to the City to present these findings and recommendations and to assist the City in measuring the benefits of the options before it.
Appendixes

Turning Movement Diagrams.................................................. 1-9
NOTE:
CHURCH STREET VOLUMES BASED
ON COMPARISON OF AADT AND PEAK
HOUR VOLUMES AT STATE AND
ALLEN.

DENOTES SIGNAL

DOWNTOWN PLANNING STUDY, PRESQUE ISLE, MAINE
NOTE:
BASED ON DIVERSION INFORMATION
PROVIDED BY VHB: 20% REDUCTION
IN THROUGH TRAFFIC AT CHAPMAN ROAD INTERSECTION.

DENOTES SIGNAL

DOWNTOWN PLANNING STUDY, PRESQUE ISLE, MAINE
DOWNTOWN PLANNING STUDY, PRESQUE ISLE, MAINE
NOTE:
BASED ON DIVERSION INFORMATION
PROVIDED BY VHB, 12% REDUCTION
IN THROUGH TRAFFIC AT CHAPMAN
ROAD INTERSECTION.

DENOTES SIGNAL

DOWNTOWN PLANNING STUDY, PRESQUE ISLE, MAINE
DOwNTOWN PLANNING STUDY, PRESQUE ISLE, MAINE