Appendix B: Memos/Letters
DRAFT
June 24, 2009
To: Tri-Community Advisory Committee
From: Antje Kablitz and Mark Eyerman
RE: Future Land Use Plan Development Matrix

To identify how land use and development patterns within the Tri-Community region affect the potential for future development in the three communities including the potential for providing expanded transit opportunities, we have put together a series of memos that look to identify how development has occurred over the last decade. We will look at –

1) The desired development pattern and density/intensity as defined by each community’s Comprehensive Plan through an assessment of the plan’s future land use components,

2) Current development requirements as outlined in each community’s zoning ordinance, and

3) Recent development patterns through an assessment of new residential and non-residential growth over the past decade as well as current projects in the pipeline (projects approved but only partially or not yet built).

This memo outlines the first part of this series – an analysis of current Future Land Use Plans.

Each community has a Future Land Use Plan, which defines the desired pattern of growth and development. These plans were established as part of a community’s comprehensive planning process and are components of the community’s adopted Comprehensive Plans.

- Saco Comprehensive Plan adopted in 1999.*

- Old Orchard Beach (OOB) Comprehensive Plan adopted in 1994.*


* Both Saco and Old Orchard Beach are currently involved in updated their Comprehensive Plans. For the purposes of this review, the analysis is based on the community’s currently adopted plan.
The purpose of the Comprehensive Plan is to define the future direction and vision for the community. The document, adopted by City Council, is designed to guide City policy development that is in line with the community vision. The Future Land Use Plan component provides a framework for zoning revisions and growth and development standards.

Each of the community’s Future Land Use Plans can be divided into two basic areas – growth and limited-growth. Growth areas include the primary locations for development. They typically focus on higher intensity/density sites such as the downtown, compact neighborhoods, and commercial/industrial nodes. The limited-growth areas include the rural portion of the community where development is restricted and an emphasis is placed on natural resource protection and agriculture related uses. Within these two areas, each community has defined its own set of goals and policies for residential and non-residential development designed to support the desired land use pattern.

To help provide a consistent picture of the three Future Land Use Plan, we have devised a future land use matrix that outlines how each community’s future land use districts relate to one another. The model divides each future land use district by whether they are in the growth area or limited growth area and then subdivides them by general use – residential, mixed-use, non-residential, and rural. The uses are further defined by their density/intensity and by their relationship to the community’s “compact” core or dependence on automobiles. “Compact” defines areas with the highest density residential districts and walkable mixed-use non-residential developments where transit opportunities exist and/or are feasible. All areas outside these areas are assumed to be auto-dependent due in part to lower density housing, suburban style commercial development, and limited transit opportunities.

In general, all three Future Land Use Plans support compact, high-density residential and mixed-use districts within their growth areas. This pattern of development potentially supports walking and transit use and provides a wide variety of non-residential amenities within walking distance of dense single and multi-family neighborhoods. Saco and Biddeford place an emphasis on the reuse and redevelopment of the mills as well as traditional downtown buildings. Old Orchard Beach supports the continuation of its high-density beach cottage community and places an emphasis on high-density residential and mixed-use development within the core and along major corridors.

All the communities maintain separate auto-dependent commercial/industrial corridors to support large-scale business growth and development that are predominantly located near major transportation networks such as Route One or the turnpike. The communities also support low-density “suburban” residential development that provide residents with easy auto
access to transportation networks, commercial developments, and business/industrial parks. Only in Old Orchard Beach and in the coastal neighborhoods of Camp Ellis in Saco and Biddeford Pool in Biddeford do these suburban residential districts include mixed-use developments that support access to compact, walkable neighborhood services.

Residential Districts

*Future Land Use residential districts are areas in which the desired use of the land is primarily residential. This includes compact, suburban, and rural single and multi-family neighborhoods.*

- All three communities follow the same desired pattern of development with medium to high-density mixed-use cores surrounded by medium/moderate density neighborhoods and a low density, suburban/rural fringe.

- Old Orchard Beach (OOB) had plans for primarily high-density residential areas that did not include commercial or mixed-use developments. These areas reflect the historic compact beach cottage neighborhoods where infill is limited and resident’s needs are served by their proximity to the downtown and neighborhood commercial nodes.

Mixed-use Districts

*Mixed-use districts are areas with a mix of both residential and non-residential development. This includes the downtowns as well neighborhood nodes that support a mix of moderate to high-density residential development along side non-residential services.*

- All three communities supported very high-density mixed-use residential development as part of downtown development (greater than 20 units per acre). Saco and Biddeford have focused this type of development on mill reuse areas. OOB focused on maintaining/expanding beachfront neighborhoods.

- Saco and Biddeford established compact mixed-use corridor districts to reflect a desired transition along major arterials from primarily residential use to a mix of residential/office/commercial use.

- Old Orchard Beach included a neighborhood node district designed to provide “walkable” neighborhood services to area residents outside of the compact core.

- OOB and Saco included areas for auto-dependent higher density mixed-use:
  - In Saco this included the historic center of Camp Ellis that supports residential, waterfront, and service development as well as a portion of Route One (near Cascades)
that supports mobile home park development in conjunction with commercial/recreational development.

- Old Orchard Beach desired high-density mixed-use within most of its commercial areas as a means of supporting multi-family and seasonal housing options throughout the community.

- OOB was the only community to include planned development as part of their Future Land Use Plan. Planned Unit Developments allow a developer to propose a large-scale plan for a specific site to support high-density mixed-use (recreation, commercial, residential) development.

Non-Residential Districts

Non-residential districts are areas include industrial and business parks as well as significant commercial corridors where residential development is limited or prohibited.

- All three communities desired non-residential districts in areas served by major arterials or the turnpike and encouraged industrial/business park development. Biddeford also included Institutional Districts (Medical/University) to support the growth of the University of New England (UNE) and Southern Maine Medical Center (SMMC).

Rural Districts

The rural zones are primarily reserved for open space, resource protection, and limited residential and/or agriculture related development.

- All three future land use plans desired limited development in rural and natural resource protection areas.

- All three communities support the continuation of low-density residential development that is in character with the rural landscape.

- Biddeford envisioned a rural non-residential district to support agricultural and limited commercial development around the City landfill.

- All three communities included districts to protect environmentally sensitive shorelands and significant natural resource from development.
## Future Land Use Comparison

### Growth Areas

| Residential | Compact |  | Auto Dependent |  | Limited Growth Areas |
|-------------|---------|  | ---------------|  | ---------------------|
| Saco        | High Density (10+ units per acre) | Med Density (5-10 units per acre) | HDR; MedDR | Cor* | Mod Density (2-5 units per acre) | Low Density (< 3 units per acre) | Rural Low Density (1-2 units per acre) | Rural Very Low Density (<1 unit per acre) |
| OOB         | R-2; R-2A |  |  |  | R-3; R-4 | R-1; R-1A |  | RC | R-D | RF | CR |
| Biddeford   | R-2; R-3 |  |  |  |  |  |  |  |  |  |  |

### Mixed-Use

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<tr>
<th>Saco</th>
<th>High Intensity Mixed-use Corridors</th>
<th>MB&amp;R; CR</th>
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<td>Biddeford</td>
<td>B-1; I-4 MSRD OR</td>
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### Non-Residential

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<td>M; U</td>
<td>S-RP</td>
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<td>B-2; I-1 I-2; I-3 LR-F</td>
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* District wherein the density is tied to the availability of public water and sewerage systems. Areas served by public sewerage and/or water systems could be developed at a higher density.
GROWTH AREA

The growth areas are the desired locations for the majority of a community’s future development. We have outlined each community’s growth area base on (A) residential districts by density, (B) mixed-use districts, and (C) non-residential districts to identify where growth was designated to take place and identify the proposed density/intensity of development.

A. Residential Districts

Residential Zones are areas in which the primary allowed use of the land is for residential purposes. Each community addressed their residential zoning districts differently. To present a “regional” perspective, we have categorized residential areas by the maximum allowed density of development. For Saco and Old Orchard Beach desired density information was provided for within their plans. The City of Biddeford did not include density information within their future land use plan as they referred to districts in relationship to existing 1999 zones. Therefore, we used the existing 1999 zoning standards to assess the desired density standards for residential districts in Biddeford.

- **High Density Residential** – primarily residential use with a maximum density of 10 or more units/acre, these areas have the greatest potential for providing the necessary density to support transit development.

  **OOB**
  - Residential 2 (R-2): Multi-family residential district (11 units per acre).
  - Residential 2A (R-2A): Single and multi-family residential district (11 units per acre).

- **Medium Density Residential** – primarily residential use with a maximum density of 5 to 10 units per acre.

  **Saco**
  - High Density Residential (HDR) : Multi-family and single-family residential district (5-10 units per acre).
  - Medium Density Residential (MedDR): Multi-family and single-family residential district (5-8 units per acre).
✓ Coastal Residential (CoR): Sewered single and two-family residential district (5-6 units per acre).

Biddeford
✓ Residential 2 (R-2): Multi-family and single-family residential district (4-8 units per acre).
✓ Residential 3 (R-3): Multi-family and single-family residential district (4-7 units per acre).

• Moderate Density Residential – primarily residential with a maximum density of 2 to 5 units per acre.

Saco
✓ Medium Density Detached Residential (MdDDR): single and two-family residential district (4 units per acre).
✓ Moderate Density Residential (ModDR): single and two-family residential district (3 units per acre).

OOB
✓ Residential 3 (R-3): single-family residential district (4-5 units per acre)
✓ Residential 4 (R-4): multi-family residential district (4-5 units per acre)

Biddeford
✓ Residential 1A (R-1-A): Moderate density single-family residential district (4 units per acre).

• Low Density Residential – primarily residential with a maximum density of 1 to 3 units per acre.

Saco
✓ Medium Density Rural Residential (MdDRR): Single-family residential district (1.5 units per acre).
✓ Coastal Residential (CoR): Unsewered single and two-family residential district (1-2 units per acre).
✓ Low Density Residential (LowDR): single-family residential district (1-2 units per acre).
OOB
✓ Residential 1 (R-1): single-family residential district (3 units per acre)
✓ Residential 1A (R-1A): single-family residential district (1.5-2.5 units per acre)

Biddeford
✓ Suburban Residential (SR-1): limited single-family residential district (1-3 units per acre)

B. Mixed-Use

Mixed-use districts encourage a combination of residential and non-residential uses. They are typically higher density compact developments that include first floor commercial and upper floor residential developments. They can also include historic corridors and suburban planned developments where non-residential and residential developments exist side by side. In either case, the focus is on providing a mix of residential and non-residential uses within a walkable environment.

- **Compact Residential/Office/Commercial Mixed-Use** – areas that allow higher intensity residential and non-residential uses within or adjacent to the core where walking or transit are possible.

Saco
✓ Saco Island (SI): Planned mixed-use development that supports higher density residential, commercial, office, and light industrial uses.
✓ Downtown (D): high intensity, mixed-use development that supports multi-family, commercial, office, and business uses.

OOB
✓ Residence/Motel (R-M): high-density residential as well as motel and commercial district along (11 residential units/acre).
✓ Shoreland Residence/Motel (S-R-M): high-density residential as well as motel district (11 residential units/acre).
✓ General Business District (B-1): high-density residential and commercial district (43 residential units/acre).
✓ Shoreland Business District (S-B): retail, business, service and conditional higher density residential district (43 residential units/acre).
Biddeford

✓ Business 1 (B-1): High-density mixed commercial and upper floor multi-family district.
✓ Industrial 4 (I-4): Mill area mixed industrial, commercial, and multi-family district.
✓ Main Street Redevelopment (MSRD): central business revitalization district with first floor commercial and upper floor residential/office development.

• Compact Limited Mixed-Use Corridors - areas of transition that allow for residential and non-residential uses along major corridors surrounding the historic downtown where walking or transit are possible.

Saco

✓ Residential/Low Intensity Business (R/LIB): Maintain the historic residential character while allowing some non-residential conversion as well as conversion to higher density residential use (6 units per acre).
✓ Historic Gateway (HG): Maintain historic character allowing residential and limited impact non-residential conversion (6 units per acre).

OOB

✓ Neighborhood Commercial District (NC): Overlay district that allows for limited non-residential development to serve area neighborhoods.

Biddeford

✓ Office Residential (OR): Maintain residential character while allowing some non-residential conversion (4 units per acre).

• Auto Dependent General Mixed-Use – areas that encourage both higher density residential and non-residential uses but are dependent on automobile access.

Saco

✓ Marine Business and Residential (MB&R): limited single-family residential and primarily marine related, commercial, and retail uses within Camp Ellis area.
✓ Commercial/Residential (C/R): allow for mobile home park development along side commercial, service, office, and recreational uses.
**OOB**

✓ Highway Business District (B-2): Mixed-use corridor along major road allow for variety of large commercial development as well as higher density residential uses. (11 residential units per acre).

**Biddeford**

✓ Waterfront District (W-1): Mix of water dependent commercial uses and residential development serving the Biddeford Pool area.

- **Planned Mixed-Use** – areas identified for planned mixed-use residential and non-residential development.

**OOB**

✓ Planned Mixed Unit Development (PMUD): large planned mixed-use project (minimum 20 acres) that includes hotel, commercial, business, and residential facilities.

### C. Non-residential

Non-residential zones are areas that include industrial and business parks as well as significant commercial corridors where residential development is limited or prohibited. Typically, these areas are auto-dependent and include large-scale developments such as retail malls and business centers that are separated from residential neighborhoods due to the large volume of traffic they produce or other incompatibilities such as noise.

- **Compact Commercial District** – in town office, business, commercial, or industrial nodes that do not allow for residential development.

**Saco**

✓ General Business (GB): retail, service, and office uses adjacent to the City core.

**Biddeford**

✓ Waterfront 2 (W-2): commercial water dependent uses.

- **Auto Dependent Commercial Nodes and Strips** – concentrated commercial areas along major travel corridors where residential development is minimal.
Saco
✓ Highway Business (HB): highway oriented commercial uses along Route 1.
✓ Limited Highway Business (LHB): low intensity commercial development where no public sewage is available.
✓ General Business (GB): retail, service, and office district.

Biddeford
✓ Business 2 (B-2): highway oriented commercial use along Routes 1 and 111.
✓ Industrial 1 (I-1): general commercial/industrial use.

- Business/Industrial Parks – planned development parks designed around automobile usage.

Saco
✓ Industrial Park (IP): allow for expansion of industrial parks.
✓ Business Parks (BP): low intensity business and light industrial uses.

QQB
✓ Light Industrial District (L-I): allow for clean, light industrial and business park uses.

Biddeford
✓ Industrial 2 (I-2): select industrial uses.
✓ Industrial 3 (I-3): gateway commercial/industrial use.

- Institutional Campuses – medical and educational campuses that are primarily dependent on automobile access.

Biddeford
✓ Medical (M): hospital and medical related offices.
✓ University (U): university and education related professional facilities.
RURAL ZONES

The rural zones are primarily reserved for open space, resource protection, and limited residential and/or agriculture related development. We have outlined each community’s rural districts base on (A) limited growth residential districts, (B) rural/agricultural development districts, and (C) resource protection districts.

A. Limited Residential

- Rural Low Density Residential – primarily residential with a maximum density of 1 to 2 units per acre.

  Biddeford
  ✓ Rural Farm (RF): limited single-family and duplex development (1-2 units per acre)

- Rural Very Low Density Residential – primarily residential with less than 1 unit per acre.

  Saco
  ✓ Rural Conservation (RC): limited single-family development with a focus on clustered housing (.5-1 unit per acre).

  OOB
  ✓ Rural District (R-D): limited single-family development with a focus on clustered housing and preservation of agricultural areas (.75-1 unit per acre).

  Biddeford
  ✓ Coastal Residential (CR): limited single-family residential district (0.5-2 units per acre)
B. Rural/Agriculture

- Rural/Agriculture – areas designated for very limited development focused primarily on agricultural or natural resource based industries.

Biddeford
- Limited Rural-Farm (LR-F): non-residential farm related uses near the City Landfill.

C. Resource Protection


Saco
- Resource Protection (RP): non-growth area that includes fragile natural resources.

OOB
- Shoreland Resource Protection (S-RP): non-growth area that includes fragile natural resources.

Biddeford
- Shoreland Protection (SP): Overlay district for the protection of streams, rivers, wetlands, and coastal areas.
To: Tom Gorrill and Advisory Committee  
From: Mark Eyerman  
Subject: Revised Tri-Community Land Use Forecast  
Date: January 12, 2010

Role of the Land Use Forecast

Traditionally, the land use forecast in a transportation study has focused on how development is likely to occur and how employment is likely to change to allow projections to be made of the likely change in travel demand that needs to be addressed in the study. This forecast typically is based upon past experience and a continuation of current patterns of development.

The new state transportation planning handbook challenges all of us to think not only of what is likely to occur under a continuation of current development patterns but also to look at whether it is feasible and desirable to try to alter the long-range development pattern to make transportation alternatives more viable. This is not an easy task.

Changing the future development pattern to increase the potential range of transportation alternatives essentially means increasing the concentration of use or density of development in some areas. The two most likely approaches are:

- increasing the intensity or density of use within walking distance of existing or potential transit corridors, or
- concentrating development within walking distance of transportation hubs.

The attached Transit Route Map identifies the parts of the Tri-Community area that fall into these two categories. The green bands show the areas within walking distance (1,500') of the current bus lines while the blue band shows areas close to the UNE shuttle bus route. The pink band shows the area within walking distance of the currently unserved portion of the Route One corridor. The red circles show the area with walking distance (2,000') of the Saco Transportation Center, the OOB Amtrak station, and the Zoom Bus stops in the Biddeford and Saco Park-and-Ride lots. This map is only a starting point for thinking about this issue. The areas are drawn based on straight line distances that may not realistically reflect walking distance, but they provide a beginning for thinking about the future development pattern.

The Transit Route Map provides a backdrop for thinking about future development in the three communities and if there are ways to increase the intensity/density of development and use within these areas or to create other concentrations of use that
could be served by transit. The following sections address both the “likely” development under current development patterns and possible changes to that development pattern to increase the viability of transportation alternatives.

Assumptions

Given the current economic environment, this is a difficult time to forecast potential future development and changes in land use over the next twenty years in the Tri-Community study area. The land use forecast is based on the following set of assumptions about the economy and rates of future growth and development.

1. Basic Assumptions about the Economy

Future development and changes in land use that may influence travel demand are tied closely to the economic situation. At this point in time, there is a high degree of uncertainty about the future of the national economy. This makes any forecast of likely development a guess based upon assumptions of what is likely to occur with respect to the national and local economies. The forecasts below are based on the following assumptions about the economy:

- It is likely to take three to five years to work our way out of the recession and return to pre-recession conditions. For example, a recently released employment forecast for Maine suggested that it could take until 2014 for employment to return to 2007 levels.
- In the 5 to 10 year timeframe (2015-2019), growth will re-emerge but it will be at a much slower rate than during the 2000-2008 period. For the purpose of the land use forecast, growth and development is assumed to be at a rate that is only 40-50% of the pre-recession rate of growth.
- In the 10 to 20 year time frame (2020 – 2029), the forecast reflects an assumption that growth and development will occur at a rate that is higher than the 2015-2019 rate but still below the pre-recession rate. For the purposes of the forecast, growth and development is assumed to be at a rate that is only 60-75% of the pre-recession rate.

2. Development Assumptions

In addition to the rate of growth and development, the land use forecast also considers where that development is likely to occur. The forecasts below are based on the following assumptions about the type of development and where it is likely to occur:
Projects that are in the “pipeline” – that have received development approvals and have started construction – will be completed essentially as they have been approved. While most of these projects where conceived and approved in a “pre-recession” economy, it is assumed that these projects will be built over the next 20 years. This includes the redevelopment of the Biddeford Mill district and Saco Island and the development of the North Park project in the Cascades/Route One area of Saco as well as a number of smaller developments.

Projects that have been approved but have not begun development may or may not be built as approved but since the sites are under consideration for development, the development of these properties over the next 20 years is likely.

The three communities will continue efforts to limit growth and development in designated “rural areas” and that large scale development is not likely to occur in these areas except in limited areas adjacent to existing developed/developing areas where public services are available.

Within the developed residential neighborhoods of the three communities, there will be limited intensification of use resulting from infill development on vacant lots and the addition of units in existing buildings including accessory apartments.

Land Use Implications

Combining the economic and development assumptions results in the following land use implications that are built into the land use forecasts:

A. Residential Land Use

5 year timeframe – residential development will continue to be limited and will occur at a rate of about 25% of the pre-recession (2000-2007) rate of development. Most residential development will occur in projects that are already in the pipeline.

5-10 year timeframe – residential development will begin to rebound. New projects will begin to be developed as projects in the pipeline begin to be built out. The rate of residential development will be about 50% of pre-recession rate.

10-20 year timeframe – the rate residential development will increase to about 75% of the pre-recession rate.
20 year study period – combining these results in a rate of residential development over the 20 year period that is about 60% of the 2000-2007 pre-recession development rate.

B. Retail Land Use

The construction of the Biddeford Crossing development and related “big-box” development in the Route 111 corridor in Biddeford has saturated the retail space market in the Tri-Community area for the foreseeable future. While there will continue to be small growth in this category over the next 20 years as existing operations upgrade and expand and new operations enter the market, these will be limited in scale and located within existing commercial districts.

C. Industrial-Office Land Use

Activity in this category of land use will be strongly influenced by the state of the local and national economy and related employment growth. The forecast envisions moderate growth in this category with most development occurring within established industrial/business park areas and the major developments already in the pipeline.

Land Use Forecast

The attached spreadsheet and maps forecast the likely amount, type, and location of development that will potentially generate additional travel demand that will need to be addressed in the study. This forecast is based on the assumptions set forth above and the current land use planning and regulation in the three communities.

Alternative Development Options

A fundamental question is whether there are alternatives to the land use and development pattern implicit in the land use forecast that would enhance the viability of transportation alternatives. The land use forecast includes six potential areas where more intensive development could occur. Development of some of these areas would require a change in local land use regulations and/or the extension of public utilities to service the development. For the purpose of travel demand forecasting, these alternatives development options are in addition to the development included in the basic Land Use Forecast. The forecast development potential for these areas is shown as separate items on the community forecast spreadsheets.
1. **Cascades/Route One Area of Saco** -- The approved development in the Cascades/Route One area of Saco is essentially lower intensity, suburban style development based primarily on the automobile. Both sides of the Route One corridor in this area offer the potential for a more concentrated form of development that could potentially support transit service along this portion of Route One.

2. **Sweetser Property Area in Saco** -- The Sweetser property in Saco adjacent to the Turnpike interchange and industrial park may offer the potential for the development on a concentrated, higher density, mixed-use development immediately adjacent to the Turnpike. If this was combined with a relocated park-and-ride lot and Zoom Bus stop, this could be the beginning of a transit-oriented development at this location.

3. **SMMC Area in Biddeford** -- The development at and adjacent to the Southern Maine Medical Center (SMMC) on Alfred Street in Biddeford creates a relatively high density area with a significant travel demand. The City currently views the area on the northwest side of Alfred Street from 5 Points to the Turnpike interchange as an industrial-business park area with a suburban, auto-oriented character. This area could develop/redevelop as more of a mixed-use, higher intensity development area.

4. **West of Turnpike in Biddeford** -- The land behind the “big-box” retail development on the north side of Alfred Street west of the Turnpike in Biddeford (Kohl’s-Home Depot) is currently zoned for low-density rural residential use. This property has the potential to be developed as a concentrated, higher-density, mixed-use, transit-oriented development.

5. **Homewood Area of Old Orchard Beach** -- The Old Orchard Beach Comprehensive Plan identifies the outer portion of Cascade Road adjacent to the Saco line (the Homewood area) as a potential high density residential development area. With the extension of the sewer up Route One to serve the North Park development in Saco, the potential exists for providing sewer service to this area. This area could be an extension of higher-intensity development in the Cascade area.

6. **Downtown Old Orchard Beach** -- A significant amount of land in the immediate downtown area of Old Orchard Beach is currently devoted to surface parking that primarily serves seasonal day-visitors. Another large area is occupied by a seasonal amusement park. In the long term, this area on both sides of the railroad tracks has the potential to evolve into a higher-density transit oriented development with the day user parking relocated to remote lots (such as at the ball park).
**Land Use Forecast**  
**Tri-Community Transportation Study**  
Revised 1/12/2010

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<th>Map Area</th>
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<th>Residential</th>
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<td><strong>Biddeford</strong></td>
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<td><strong>A. Basic Land Use Forecast</strong></td>
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<tr>
<td>B-11 Rural Residential west of TP</td>
<td>25 units of SFHs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B-12 South St-Cathedral Oaks</td>
<td>50 units of condos</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B-13 Downtown - Mill District</td>
<td>250 units infill-redevelopment</td>
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</tbody>
</table>

**Biddeford Basic Subtotal**  
525 units plus 1,200 dorm accommodations  
150,000 SF retail-service-restaurant  
50,000 SF college+athletic complex - 100,000 SF medical-office - 500,000 SF light industrial-distribution - 250,000 SF office-service
## Land Use Forecast

### Tri-Community Transportation Study

Revised 1/12/2010

<table>
<thead>
<tr>
<th>Map Area</th>
<th>Description</th>
<th>Residential</th>
<th>Retail-Commercial</th>
<th>Industrial-Office</th>
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<tr>
<td>B. Alternative Development Options</td>
<td></td>
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<tr>
<td>A-3</td>
<td>SMMC Area</td>
<td>100 units of condos &amp; multifamily</td>
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<tr>
<td>A-4</td>
<td>West of the Turnpike</td>
<td>200 units of condos &amp; multifamily</td>
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<td>Biddeford Alternative Development Subtotal</td>
<td>300 units of condos &amp; multifamily</td>
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<tr>
<td>C. Total Development – Biddeford</td>
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</table>

825 units plus 1,200 dorm accommodations

150,000 SF retail-service restaurant

50,000 SF college+athletic complex - 100,000 SF medical-office - 500,000 SF light industrial-distribution - 250,000 SF office-service
# Land Use Forecast
Tri-Community Transportation Study
Revised 1/12/2010

## Map Area Description Residential Retail-Commercial Industrial-Office

### Old Orchard Beach

#### A. Basic Land Use Forecast

<table>
<thead>
<tr>
<th>Map Area</th>
<th>Description</th>
<th>Residential</th>
<th>Retail-Commercial</th>
<th>Industrial-Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>OOB-1</td>
<td>Ocean Park - undeveloped land</td>
<td>150 units of retirement housing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OOB-2</td>
<td>Ocean Park - developed area</td>
<td>25 units of infill &amp; conversions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OOB-3</td>
<td>Ocean Park Rd-Old Orchard Rd</td>
<td>25 units of condos</td>
<td>40,000 SF of retail-restaurant-service &amp; 120 hotel rooms</td>
<td></td>
</tr>
<tr>
<td>OOB-4</td>
<td>Outer Saco Avenue</td>
<td>25 units of infill &amp; conversions</td>
<td>20,000 SF of retail-restaurant-service</td>
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<tr>
<td>OOB-5</td>
<td>Temple-Saco Ave</td>
<td>25 units of infill &amp; conversions</td>
<td>50 additional campsites (seasonal)</td>
<td>50,000 SF of light industrial-warehouse space</td>
</tr>
<tr>
<td>OOB-6</td>
<td>PWD &amp; west of Smithwheel</td>
<td>150 units of condos &amp; SFHs</td>
<td></td>
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</tr>
<tr>
<td>OOB-7</td>
<td>Smithwheel area</td>
<td>25 units of SFHs</td>
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<tr>
<td>OOB-8</td>
<td>Ross Road area</td>
<td>300 units of condos &amp; SFHs</td>
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<tr>
<td>OOB-9</td>
<td>Dune Grass - Dirigo area</td>
<td>25 units of SFHs</td>
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<tr>
<td>OOB-10</td>
<td>Homewood Park</td>
<td>25 units of SFHs</td>
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<td></td>
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<tr>
<td>OOB-11</td>
<td>Cascade Rd</td>
<td>100 additional campsites (seasonal)</td>
<td>10,000 SF of retail-restaurant-service</td>
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<tr>
<td>OOB-12</td>
<td>Intown developed neighborhoods</td>
<td>50 units of infill &amp; conversions</td>
<td>10,000 SF of retail-restaurant-service</td>
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<tr>
<td>OOB-13</td>
<td>Portland Ave-Milliken Mills</td>
<td>25 units of SFHs</td>
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<tr>
<td>OOB-14</td>
<td>Bailey's</td>
<td>50 units of SFHs</td>
<td>Increased year-round use - 150 units of infill/redevelopment - 100 units of motel conversions</td>
<td>20,000 SF of retail-restaurant-service</td>
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<td>OOB-15</td>
<td>Downtown-Grand Ave</td>
<td>90,000 SF of retail-restaurant-service - 120 hotel rooms – 150 campsites</td>
<td>50,000 SF of light industrial-warehouse space</td>
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<tr>
<td><strong>OOB Basic Subtotal</strong></td>
<td></td>
<td><strong>1,100 units</strong></td>
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## Land Use Forecast

**Tri-Community Transportation Study**

Revised 1/12/2010

<table>
<thead>
<tr>
<th>Map Area</th>
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<tbody>
<tr>
<td>B. Alternative Development Options</td>
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<td></td>
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<tr>
<td>A-5</td>
<td>Homewood Area</td>
<td>100 units of condos and multifamily</td>
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<td></td>
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<tr>
<td>A-6</td>
<td>Downtown Old Orchard Beach</td>
<td>200 units of multifamily housing</td>
<td>50,000 SF of retail-restaurant-service</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OOB Alternative Development Subt multifamily</td>
<td>300 units of condos and</td>
<td>50,000 SF of retail-restaurant-service</td>
<td></td>
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<tr>
<td>C. Total Development -- OOB</td>
<td>1,400 units</td>
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</table>

140,000 SF of retail-restaurant-service - 120 hotel rooms - 150 campsites | 50,000 SF of light industrial-warehouse space
Land Use Forecast
Tri-Community Transportation Study
Revised 1/12/2010

<table>
<thead>
<tr>
<th>Map Area</th>
<th>Description</th>
<th>Residential</th>
<th>Retail-Commercial</th>
<th>Industrial-Office</th>
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<tbody>
<tr>
<td>S-1</td>
<td>Ferry Road - Beach</td>
<td>100 units of infill and accessory apt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S-2</td>
<td>Intown Developed Residential areas</td>
<td>150 units of infill and accessory apt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S-3</td>
<td>Downtown &amp; Saco Island</td>
<td>150 units of infill &amp; rehab</td>
<td>20,000 SF of retail-restaurant-service</td>
<td>25,000 SF office</td>
</tr>
<tr>
<td>S-4</td>
<td>Saco Def-Ind Parkway area</td>
<td></td>
<td></td>
<td>150,000 SF light ind-office</td>
</tr>
<tr>
<td>S-5</td>
<td>Sweetser area</td>
<td></td>
<td></td>
<td>100,000 SF office-service-light ind</td>
</tr>
<tr>
<td>S-6</td>
<td>Industrial Park</td>
<td></td>
<td></td>
<td>100,000 SF service-light ind-distribution</td>
</tr>
<tr>
<td>S-7</td>
<td>Route 1 - Auto Mile</td>
<td>100 units - condos</td>
<td>20,000 SF of retail-restaurant-service</td>
<td>- 20,000 SF entertainment</td>
</tr>
<tr>
<td>S-8</td>
<td>Business Park</td>
<td></td>
<td></td>
<td>75,000 SF light ind-office</td>
</tr>
<tr>
<td>S-9</td>
<td>Pine Haven</td>
<td>75 affordable units</td>
<td></td>
<td></td>
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<tr>
<td>S-10</td>
<td>Cascades - Park North</td>
<td>400 units - condos &amp; cottages</td>
<td>50,000 SF of retail-restaurant-service</td>
<td>200,000 SF office-service-light ind</td>
</tr>
<tr>
<td>S-11</td>
<td>Jenkins Rd - Middle Sch - County Rd</td>
<td>150 units of SFHs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S-12</td>
<td>Rural area</td>
<td>300 units of SFHs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S-13</td>
<td>Main - Rt 1 - Ocean Park</td>
<td></td>
<td>20,000 SF retail-restaurant-service - 120 hotel rooms</td>
<td></td>
</tr>
</tbody>
</table>

*Saco Basic Subtotal* | 1,425 units | 110,000 SF retail-restaurant-service - 120 hotel rooms - 20,000 SF entertainment | 650,000 SF light ind-office-service-distribution |
<table>
<thead>
<tr>
<th>Map Area</th>
<th>Description</th>
<th>Residential</th>
<th>Retail-Commercial</th>
<th>Industrial-Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>Cascades/Route One Area</td>
<td>200 units of condos &amp; multifamily</td>
<td>50,000 SF retail-restaurant-service</td>
<td>100,000 SF light ind-office-service</td>
</tr>
<tr>
<td>A-2</td>
<td>Sweetser Area</td>
<td>150 units of condos &amp; multifamily</td>
<td>20,000 SF retail-restaurant-service</td>
<td>100,000 SF light ind-office-service</td>
</tr>
<tr>
<td></td>
<td><strong>Saco Alternative Development Subi</strong></td>
<td><strong>350 units of condos &amp; multifamily</strong></td>
<td><strong>70,000 SF retail-restaurant-service</strong></td>
<td><strong>100,000 SF light ind-office-service</strong></td>
</tr>
<tr>
<td></td>
<td>C. Total Development -- Saco</td>
<td>1,775 units</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>180,000 SF retail-restaurant-service - 120 hotel rooms - 20,000 SF entertainment</td>
<td>750,000 SF light ind-office-service-distribution</td>
</tr>
</tbody>
</table>
February 16, 2010

Mr. Greg Tansley  
Chair, Tri-Community Advisory Committee  
205 Main Street, PO Box 586  
Biddeford, Maine 04005-0586

Re: Transportation Forecasts and Initial Findings

Dear Committee,

Our office has received the forecasts prepared by Kevin Hooper for PACTS as part of this project. As you recall, Mark Eyerman of Planning Decisions had prepared land use forecasts; this information was transmitted to PACTS for Kevin's use in generating forecasts, along with volume-based information compiled by our office for the base condition.

**Land Use Forecasts**

The Committee received a memo from Mark on January 12, 2010 detailing a base set of land use forecasts as well as an alternative land use forecast. In summary, the forecasts were based upon the following:

**Base Forecast**

- The economy is likely to take three to five years to recover from the recession and return to pre-recession conditions. For example, a recently released employment forecast for Maine suggested that it could take until 2014 for employment to return to 2007 levels.

- In the 5 to 10 year timeframe (2015-2019), growth will re-emerge but it will be at a much slower rate than during the 2000-2008 period. For the purpose of the land use forecast, growth and development is assumed to be at a rate that is only 40-50% of the pre-recession rate of growth.

- In the 10 to 20 year time frame (2020 – 2029), the forecast reflects an assumption that growth and development will occur at a rate that is higher than the 2015-2019 rate but still below the pre-recession rate. For the purposes of the forecast, growth and development is assumed to be at a rate that is only 60-75% of the pre-recession rate.

- Projects that are in the “pipeline” – that have received development approvals and have started construction – will be completed essentially as they have been approved. While most of these projects where conceived and approved in a “pre-recession” economy, it is assumed that these projects will be built over the next 20 years. This includes the redevelopment of the Biddeford Mill district, Saco Island, the development of the North Park project in the Cascades/Route One area of Saco, as well as a number of smaller developments.

- Projects that have been approved but have not begun development may or may not be built as approved but since the sites are under consideration for development, the development of these properties over the next 20 years is likely.
The three communities will continue efforts to limit growth and development in designated “rural areas” and large scale development is not likely to occur in these areas except in limited areas adjacent to existing developed/developing areas where public services are available. Within the developed residential neighborhoods of the three communities, there will be limited intensification of use resulting from infill development on vacant lots and the addition of units in existing buildings including accessory apartments.

**Alternative Development Forecast**

Mark, in consultation with the Committee, developed an alternative development forecast, which envisioned more intensive development in the following areas:

1. **Cascades/Route One Area of Saco** -- The approved development in the Cascades/Route One area of Saco is essentially lower intensity, suburban style development based primarily on the automobile. Both sides of the Route One corridor in this area offer the potential for a more concentrated form of development that could potentially support transit service along this portion of Route One.

2. **Sweetser Property Area in Saco** -- The Sweetser property in Saco adjacent to the Turnpike interchange and industrial park may offer the potential for the development on a concentrated, higher density, mixed-use development immediately adjacent to the Turnpike. If this was combined with a relocated park-and-ride lot and Zoom Bus stop, this could be the beginning of a transit-oriented development at this location.

3. **SMMC Area in Biddeford** -- The development at and adjacent to the Southern Maine Medical Center (SMMC) on Alfred Street in Biddeford creates a relatively high density area with a significant travel demand. The City currently views the area on the northwest side of Alfred Street from 5 Points to the Turnpike interchange as an industrial-business park area with a suburban, auto-oriented character. This area could develop/redevelop as more of a mixed-use, higher intensity development area.

4. **West of Turnpike in Biddeford** -- The land behind the “big-box” retail development on the north side of Alfred Street west of the Turnpike in Biddeford (Kohl’s-Home Depot) is currently zoned for low-density rural residential use. This property has the potential to be developed as a concentrated, higher density, mixed-use, transit-oriented development.

5. **Homewood Area of Old Orchard Beach** -- The Old Orchard Beach Comprehensive Plan identifies the outer portion of Cascade Road adjacent to the Saco line (the Homewood area) as a potential high density residential development area. With the extension of the sewer up Route One to serve the North Park development in Saco, the potential exists for providing sewer service to this area. This area could be an extension of higher-intensity development in the Cascade area.

6. **Downtown Old Orchard Beach** -- A significant amount of land in the immediate downtown area of Old Orchard Beach is currently devoted to surface parking that primarily serves seasonal day-visitors. Another large area is occupied by a seasonal amusement park. In the long term, this area on both sides of the railroad tracks has the potential to evolve into a higher-density transit-oriented development with the day user parking relocated to remote lots (such as at the ball park).
The detailed land use forecasts were included with Mark's memo.

**Turning Movement Forecasts**

Kevin Hooper utilized the information discussed above and entered this information into the PACTS forecast model. The initial year for the model was 2009; the forecast year, 2035. Again, the forecasts were completed both for the base and alternative land use. The forecasts were compiled for the following intersections:

- Route 1 at Cascade Road
- Route 1 at Flag Pond Road
- Route 1 at Ross Road
- Route 1 at I-195
- Route 1 at Route 9 (Saco)
- Route 1 at North Street
- Route 9 at Beach Street
- Route 5 at Garfield Street
- Route 112 at Garfield Street
- Route 112 at Industrial Park Road
- Industrial Park Road at I-195 EB
- Industrial Park Road at I-195 WB
- Route 1 at South Street
- Route 111 at Pool Street
- Route 1 at Five Points North
- Route 1 at Five Points South
- Route 111 at MTA Exit 32
- Ross Road at Cascade Road
- Cummings Boulevard at Union/Saco Ave.
- Halfway Rotary

**Preliminary Findings of Forecasts**

Based on the PACTS information, there are anticipated to be significant variations in the volume of traffic volume increases. The traffic volume and percentage increases for the PM peak hour are summarized on the following tables:

<table>
<thead>
<tr>
<th>Intersection</th>
<th>2009 TEV</th>
<th>2035 TEV</th>
<th>TEV Increase</th>
<th>% TEV Increase</th>
<th>Annual % Inc</th>
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</thead>
<tbody>
<tr>
<td>Route 1 at Cascade</td>
<td>2183</td>
<td>2655</td>
<td>472</td>
<td>22%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Route 1 at Flag Pond</td>
<td>2177</td>
<td>2624</td>
<td>447</td>
<td>21%</td>
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<td>Route 1 at Ross</td>
<td>2400</td>
<td>2798</td>
<td>398</td>
<td>17%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Route 1 at I-195</td>
<td>4409</td>
<td>5045</td>
<td>636</td>
<td>14%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Route 1 at Route 9</td>
<td>2049</td>
<td>2337</td>
<td>288</td>
<td>14%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Route 1 at North</td>
<td>1639</td>
<td>1905</td>
<td>266</td>
<td>16%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Route 9 at Beach</td>
<td>1929</td>
<td>2133</td>
<td>204</td>
<td>10%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Route 5 at Garfield</td>
<td>798</td>
<td>1230</td>
<td>432</td>
<td>54%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Route 112 at Garfield</td>
<td>2448</td>
<td>2888</td>
<td>440</td>
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<td>0.7%</td>
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<tr>
<td>Route 112 at Ind. Park</td>
<td>3352</td>
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<td>346</td>
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<tr>
<td>Ind. Park at I-195 EB</td>
<td>2607</td>
<td>2982</td>
<td>375</td>
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<td>Ind. Park at I-195 WB</td>
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<td>1968</td>
<td>272</td>
<td>16%</td>
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<tr>
<td>Route 1 at South</td>
<td>1743</td>
<td>2031</td>
<td>288</td>
<td>17%</td>
<td>0.6%</td>
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<tr>
<td>Route 111 at Pool</td>
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<td>2139</td>
<td>262</td>
<td>14%</td>
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<tr>
<td>Route 1 at 5 Points N</td>
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<td>4386</td>
<td>509</td>
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<tr>
<td>Route 1 at 5 Points S</td>
<td>4279</td>
<td>4735</td>
<td>456</td>
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<tr>
<td>Route 111 at MTA 32</td>
<td>4867</td>
<td>5665</td>
<td>798</td>
<td>16%</td>
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<td>728</td>
<td>1006</td>
<td>278</td>
<td>38%</td>
<td>1.2%</td>
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<tr>
<td>Cummings at Union</td>
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<td>155</td>
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<td>Halfway Rotary</td>
<td>2537</td>
<td>2896</td>
<td>359</td>
<td>14%</td>
<td>0.5%</td>
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Intersection Volume and Percentage Increases for PM Peak Hour: Alternative Land Use Forecast

<table>
<thead>
<tr>
<th>Intersection</th>
<th>2009 TEV</th>
<th>2035 TEV</th>
<th>TEV Increase</th>
<th>% TEV Increase</th>
<th>Annual % Inc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route 1 at Cascade</td>
<td>2183</td>
<td>2754</td>
<td>571</td>
<td>25%</td>
<td>0.9%</td>
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<tr>
<td>Route 1 at Flag Pond</td>
<td>2177</td>
<td>2696</td>
<td>519</td>
<td>24%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Route 1 at Ross</td>
<td>2400</td>
<td>2831</td>
<td>431</td>
<td>18%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Route 1 at I-195</td>
<td>4409</td>
<td>5094</td>
<td>685</td>
<td>16%</td>
<td>0.6%</td>
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<td>Route 1 at Route 9</td>
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<td>2335</td>
<td>286</td>
<td>14%</td>
<td>0.5%</td>
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<tr>
<td>Route 1 at North</td>
<td>1639</td>
<td>1905</td>
<td>2666</td>
<td>16%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Route 9 at Beach</td>
<td>1939</td>
<td>2133</td>
<td>194</td>
<td>10%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Route 5 at Garfield</td>
<td>798</td>
<td>1231</td>
<td>433</td>
<td>54%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Route 112 at Garfield</td>
<td>2448</td>
<td>2892</td>
<td>444</td>
<td>18%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Route 112 at Ind. Park</td>
<td>3362</td>
<td>3698</td>
<td>336</td>
<td>10%</td>
<td>0.4%</td>
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<tr>
<td>Ind. Park at I-195 EB</td>
<td>2627</td>
<td>3017</td>
<td>390</td>
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<td>Route 111 at Pool</td>
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<td>Route 1 at 5 Points N</td>
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<td>Route 1 at 5 Points S</td>
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<tr>
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</table>

The rates are summarized (and color coded by percentage increase in peak hour traffic) on the graphics attached with this memo.

An examination of this forecast data reveals that, for the most part, growth rates will remain relatively slow over the course of the forecast period. Overall, the greatest growth appears to be taking place along northern Route 1 in Saco down Cascade Road into Old Orchard Beach, as well as Route 5 near Garfield Street. In the case of Route 1 and Cascade Road, given the recent levels of development, as well as those anticipated, this is to be expected. The growth along Route 5 is primarily driven by increases in volumes along Garfield Street. However, these volumes are not showing up along Industrial Park Road to the same degree. As the PACTS model accounts for congestion, this may suggest that the Garfield traffic is ultimately destined for other locations, and may be rerouting to new outlets.

This data also suggests that even with the Alternative Development Areas added to the system, peak hour traffic growth in general will not be significantly affected. And as intensive, clustered development may provide opportunities for increased transit use, the ultimate impact on traffic volumes could likely be further reduced.

**Closing**

We will be discussing this information in greater detail at the meeting on February 24th. In the meantime, keep in mind that we will be moving onto discussions of transportation policy and system alternatives.
Sincerely,

Gorrill-Palmer Consulting Engineers, Inc.

[Signature]

Thomas L. Gorrill, P.E., P.T.O.E.
President

Enclosure

TLG/jhb/IN2125/committee_memo 02-16-10.doc
MEMORANDUM

To: Tom Gorrill & Jeremiah Bartlett, Gorrill-Palmer
From: Jason Schriever, Nelson\Nygaard
Date: April 1, 2010
Subject: Tri-Town Study, Draft Transit Recommendations

This memorandum summarizes draft conclusions and recommendations regarding reducing vehicle trips in the tri-town study area. It is intended to contribute to discussions with the advisory committee and frame potential further analysis.

Preliminary Conclusions
Based upon the analysis to date as conducted by the Gorrill-Palmer team, the following key conclusions can be drawn:

- Using current trip generation assumptions, average traffic growth under either land use scenario is 0.6% per year until the forecast year. However, the regional travel demand model has determined that some intersections may experience over 50-percent volume growth. If the model is an accurate projection of travel habits, even the most optimistic shift to alternative modes will not avoid some needed road capacity expansions.

- It is worth comparing regional traffic volumes and networks to similarly sized regions that have not expanded road capacity, either by policy, funding constraint, or geography. In addition to places like Multnomah County OR and Kitsap County, WA, Maine has its own example of Portland, where significant regional growth has not been matched by road capacity expansion in its most congested downtown (the peninsula), yet local commerce, businesses, and the real estate market have thrived during this same period.

- The existing travel demand model has no multi-modal component. It is not capable of estimating the effect of improved transit frequencies, better biking facilities, and improved pedestrian connectivity. The most notable (and local) example of the failure of modeling techniques is Boston’s Central Artery Project, where models predicted massive traffic impacts during extended closures that never materialized. This “vanishing traffic” (Braess’ Paradox) went to unpredicted and uncongested routes with no excess impact to arterials or transit lines. More recent modeling techniques have demonstrated that significant vehicle trip reductions can be predicted by accommodating better user travel preferences and sensitivity to factors such as constrained capacity, development density, use mix, cost, and convenience. We should not base the region’s transportation and land use decisions on a single antiquated tool.

- Existing transit services in the tri-town region are very uncoordinated, serving specific markets and specific alignments with no interoperability, even where services overlap.
This is most noticeable in the relative isolation of Zoom service from other services, the narrow service of the UNE shuttle, the impact Amtrak train stops have on bus operations in Saco, and the uncoordinated stop locations of the overlapping ShuttleBus and Tri-Town routes. The potential for better coordination is significant.

Potential Transit Improvements

The following suggestions should be assessed on a schedule and service-hour basis independent of existing operating authority and expectations, and they should be discussed with the advisory committee.

- **Interlining services.** Zoom, ShuttleBus, Tri-Town, WAVE, and UNE services have the capacity to work in a more coordinated fashion. While existing operating structures are rather different, many services overlap and intersect, enabling more frequent and continuous transit connections – especially through higher density areas, including downtown Biddeford, Saco, and Old Orchard Beach. Schedules can be better coordinated to ensure short transfers, easy to remember departure times, and frequencies that better match demand. Constraints on working more cooperatively should be identified in cooperation with each provider and turned into action items to be recommended by this effort.

- **Transit priority.** Many reliability and speed issues can be attributable to basic operations at intersections, bus stops, and through downtowns. Simple low-cost improvements should be identified, including reduced signal cycle lengths, queue jump lanes, far side bus stops, signal pre-emption, etc.

- **Transit visibility.** Besides the success of the regional transit map, many other initiatives are necessary to increase awareness of transit. Especially with better service interlining, stop specific schedules should be produced and posted along with system maps. Private partnerships should be sought for maintaining stops, sharing transit information, and providing benches, signs, and shelters. The region should be working actively to improve web access to transit information, especially through mobile devices.

- **Land use permitting.** Communities should seriously consider transit planning in new development review, particularly with design of site access and provision of parking. Simple driveway and frontage treatments can make transit work more safely and encourage passengers to wait and walk to/from buses. Where parking is provided, communities should consider obligations or trade-offs that see transit amenities and/or information provided to travelers.

- **Land use planning.** The potential to embrace transit more requires a more compact form of development than exists in most areas outside of the historic downtowns. Communities should consider mechanisms to encourage mixed-use and density near transit while encouraging design that promotes walking to and from the bus.

Other Multi-Modal Improvements

- Besides planned bike lanes and multi-use paths, the region needs to implement municipally-based programs that ensure all new development includes features that promote alternative modes, including:
  - Curb cuts that keep pedestrians at the sidewalk elevation
  - Intersection treatments that reduce crosswalk lengths, which reduces delay for all modes
  - Reduced signal cycle lengths that may lengthen queues but actually maintain vehicle LOS while improving pedestrian and bicycle LOS
  - APBP and AASHTO approved bicycle parking at all new development
- Reduced lane widths and traffic caliming in areas where densities can support other modes

- The region's communities should consider the implementation of employer and developer incentives that ensure the installation of needed biking, walking, and transit improvements. Most likely candidates are density/FAR bonuses in areas that are transit-oriented and promoting mixes of uses both horizontally and vertically. Other incentive programs can be transportation demand management (TDM) programs and parking pricing or cash-out.

**Potential Next Steps**

- Given the need to address projected traffic congestion with status quo growth assumptions, it is incumbent upon this study effort to help demonstrate an alternative future for the region. A pilot or test case is recommended for a prime development area — such as the potential TOD north of the existing big box zone in Biddeford or Saco Island — where alternative travel demand models, land use regulations, and alternative transportation infrastructure and programs can be modeled.

- A key product may be an educational brochure that compliments PACTS' regional initiatives (as evidenced by their recent video). Many stakeholders in this effort support traffic reduction. However, better evidence of successful policies from around the country and real-world local examples are needed to help build support for changes to land use and transportation practices. An educational brochure may be an excellent tool for promoting the conclusions of this effort and the pilot project in particular.
Memo

To: Tri-Community Advisory Committee
From: Tom Gorrill and Jeremiah Bartlett
CC: Mark Eyerman, Planning Decisions, Art Handman, KMJ, Jason Schrieber, Nelson\Nygaard
Date: 4/28/2010
Re: Draft Transportation Strategies

The Project Team has been working on preliminary recommendations for the Tri-Community Transportation Plan. To preface this Plan, some discussion on the overall growth in the area bears additional discussion to provide context for the recommendations.

Anticipated Growth

Based on the household information and jobs forecasts compiled in the PACTS model, our office was able to complete a relative comparison of existing built area to proposed built area for the Tri-Community region. What is interesting is that, although the level of proposed development for the base land use forecast and the additive alternative forecast appears by all accounts to be significant, in reality, it is only equivalent to increasing the overall square footage by about fifteen percent, perhaps in certain localized areas by as much as twenty percent.

As such, approximately, 85 percent of the built area is already on the ground and generating trips of various modes. Currently, the balance is weighted very heavily toward the single-occupant automobile.

In addition, the economic forecasts supplied by Planning Decisions for Biddeford, Saco and Old Orchard Beach suggests very slow growth through 2020, with steady and sustained growth not until after 2020. If extrapolated in a linear fashion, the annual rate of development increases at about 0.6% per year, which lines up well with the typical rate of peak hour traffic growth established and discussed in the previous memo to the Committee. Correlating with the overall forecast data results in the expectation that the next ten years should see 0.3% to 0.5% growth per year, followed by closer to 1.0% annual growth.
As such, the relative growth tells us several things:

1. The most effective solutions will be those that address the issues of existing land uses.
2. As growth in the near term will be negligible, there is sufficient time to enact a number of strategies before existing transportation deficiencies are noticeably exacerbated.
3. Growth in traffic volumes at the periphery appears to be largely due to anticipated development outside of the Tri-Community area.
4. Strategies that are flexible enough to satisfy existing deficiencies while anticipating long-term ones will be by far the most effective.

**Draft Transportation Strategies**

What follows is an itemized listing of ongoing programs and strategies for major aspects of transportation, including land use and development. These will be discussed at the Committee meeting with a goal of finalizing strategies for incorporation into a Plan.

**Traffic**

1. Optimization/modifications of intersection traffic control results in most benefit for least cost
   - Intersection of Elm/Water being upgraded in Saco
   - Intersection of Route 112/Industrial Park Road being upgraded in Saco
   - Detection for the intersection of Elm/Main/North Beach upgraded to video in Saco
   - Queue detection improvements for I-195 ramps to Main Street designed in Saco
   - New signal equipment for Main Street at I-195 eastbound intersection recently installed
   - Queue detection improvements for I-195 eastbound off-ramp to Industrial Park Road designed in Saco
   - Updated signal plan for intersection of Main Street at Hutchins/Shannon designed in Saco
   - Updated signal plan for intersection of Main Street at King/Fairfield designed in Saco
   - Signals along Route 111 corridor from Biddeford Crossing to Five Points up to date
   - Retiming recommended for downtown signals in Biddeford Downtown Traffic/Parking Plan
   - New signal equipment at Saco/Union/EE Cummings in Old Orchard Beach
Halfway Rotary was a candidate for a roundabout in Old Orchard Beach – should continue to be pursued

Route 111 in Biddeford will likely never be widened – if additional capacity is needed at intersections in 25 years, may require larger multi-lane roundabouts like 109/4 in Sanford

Examine signal cycle lengths to see if adjusting timing would benefit all modes (sometimes a shorter cycle works as much as a longer cycle)

Recommend prohibition of left turns from Elm Street northbound to North Street in Saco – route traffic from Elm to Lincoln to Spring to North

Restripe Elm Street Bridge to extend left turn storage from Elm Street to Lincoln Street

Temporarily close inner lane (example: one week with barrels/jersey barriers) of northbound Main Street at North Street and observe queues during summer with and without second lane to determine feasibility of adjusting geometry without committing to restriping

Break up long northbound Main Street left turn lane passing by Factory Island/Transportation Center into two separate storage areas separated by a raised island
  • Prevents vehicles using lane as a bypass/lane jump option (observed in field)
  • Island could be planted to establish gateway treatment in key part of a redevelopment area

2. Access to and from the Maine Turnpike remains confined to two interchanges, which serve communities to the north and west of the Tri-Community area as well.

Central York County Connections study will be underway later this year – its findings may well impact east-west issues for Tri-Community Area

The Route 112 corridor study recommended the reopening of the old Saco interchange to allow traffic to and from I-95 northbound to bypass the Industrial Park Road intersection – this should be explored further, and dialogue with MTA formalized

Use of former Saco interchange could be accomplished with an E-ZPass-activated gate

Interchange with Flag Pond Road (relocated to Cascade Road) has been discussed – redesign intersection of Rocky Hill Road and Buxton Road to encourage use of new interchange by traffic from west
> Investigate interchange with Route 111 west of Exit 32, potentially at Andrews Road

3. Greater capacity on Routes 112, 111, 5, 22, 98 has been discussed as being desired

> Carrying capacity of roadways is not at issue – the issue is capacity of roadways at intersections at the rural/urban interface

> Primarily an issue of connectivity to Maine Turnpike – see Item #2

> Due to STPA policies, roadway widening is considered a last resort, but roads should be up to current design standards and properly maintained

> Some level of congestion may be useful in keeping other modes more viable, and keeping traffic slow in urban areas; favor transit with bus pre-emption

4. Concerns with congestion in downtown Biddeford/Saco, particularly along Main and Elm

> Examine possibility of one-way loops, for Elm and Main – several loop possibilities

  • Elm/Water/Main (Saco)

  • Elm (Saco/Biddeford)/Main (Biddeford)/Main (Saco)

  • Elm from North Street (Saco) to Five Points (Biddeford) to Alfred and Main (Biddeford back to Saco)

5. Peak hour traffic volumes in Old Orchard Beach are primarily a significant issue for a short period of time, typically late June though late August.

> Should explore more transit options, which could include shuttles from Park and Ride lots or more downtown shuttle for visitors already driving into town – would need partnership with private entities, potentially beyond campground operators

> The Town has been pursuing a potential industrial access road off of the end of I-195. This may allow for the potential of park-and-ride lots with shuttle access from that location

> Newer residential developments, such as Dunegrass, suggest that OOB may have opportunities to increase its year-round housing stock, which could result in less variable seasonal traffic flows

> May wish to focus on year-round development in general to stabilize traffic flows
6. Truck movements on local streets are a perceived issue

➤ Saco, Biddeford and Old Orchard Beach can work with PACTS to study trucking issue and provide recommendations on routing and signage in detail

➤ Given that access to major transportation infrastructure is available, there may be a need to survey local trucking generators and determine routing constraints

➤ Overall routing and signage recommendations will be provided in final Plan

7. Public perception of parking deficiencies in downtown areas, particularly Saco

➤ Saco does not have a wayfinding signage for downtown lots

➤ Saco's downtown parking lots are largely privately-owned, which presents a challenge for various users

➤ Saco could work with Saco Valley Shopping Center to complete parking occupancy counts and determine if a leasing arrangement could be made to provide City spaces

➤ Saco could establish additional parking behind Hannaford along Route 1 if new parking areas do not result in environmental impacts – could use shuttle to pick up and drop off

➤ Parking areas behind Main Street buildings in Saco between Water and Storer Street are not connected and poorly configured – incentives to connect or regrade as one large lot would provide more parking in the same land area (could also be part of a mixed-use development project)

➤ Significant parking recommendations exist for downtown Biddeford from Downtown Parking and Traffic Study, including the long-term potential for structured parking at Alfred/Jefferson/Washington block

➤ OOB can examine parking off of proposed industrial road (if built) to avoid downtown congestion

8. Park-and-Ride lots appear insufficient at times, particularly near Exit 32

➤ A parking occupancy study should be completed at lots to confirm situation – should include weekend occupancies, as Sunday use is also a concern

➤ Routing of Zoom buses could be adjusted, or use WAVE buses to access other parking areas
Planning for structured parking is costly, and should only be used as a last option – begin as a single-level parking deck that allows for future expansion.

9. Review potential of relief on local streets as a result of toll-free travel along I-95
   ➢ Has precedent in Lewiston-Auburn area
   ➢ Communities should enter into dialog with MTA
   ➢ May be a discussion point in Central York County Connections Study
   ➢ In-house assessment indicates that this may not relieve much traffic

*Transit*

1. Short-term measures to address transit concerns in Tri-Community area
   ➢ ShuttleBus/Zoom is embarking on a new signage program that will address awareness of transit options
   ➢ Widespread distribution of the new Regional Transit Map issued by PACTS can be done and will help increase public understanding of options
   ➢ There are three existing transit options to and from Portland – ShuttleBus Intercity service, Zoom Bus, and Downeaster service
   ➢ Currently difficult to coordinate bus services – should examine more overlap
   ➢ With increased signage and distribution of maps and schedules, public will better understand the potential for existing transit service
   ➢ ShuttleBus/Zoom operator is tweaking schedules to better coordinate transfers between operators - there is currently no low-cost fare transfer; this should be explored
   ➢ The South Portland/Saco Bay Transit Study completed in October 2008 addressed many concerns and offered many recommendations
     • The ShuttleBus/Zoom operator implemented most of those recommendations in 2009
     • Current economic conditions are forcing that operator to consider reducing service at this time
   ➢ Coordinate Zoom, Shuttlebus, Tri-Town, WAVE, UNE services – local coordinator or via PACTS to interthread service, with increased connections, improved fare-collection, easier transfers
   ➢ Examine transit prioritization, including reduced signal cycle lengths, queue jump lanes, far side bus stops, signal pre-emption, etc.
Visibility can be further improved with stop specific schedules posted along with system maps at every transit stop.

Private partnerships should be sought for maintaining stops, sharing transit information, and providing benches, signs, and shelters.

The region should be working actively to improve web access to transit information, especially through mobile devices (commonplace in larger metro areas).

2. Parking for Zoom Bus Maxed out at times (Park and Ride Lots)

Demand at existing lots suggests sufficient occupancy for structured parking.

Funding to construct, operate, and maintain such structures is not readily available.

Use of feeder service such as provided by WAVE is a better alternative, as it eliminates the need for a commuter to even use a privately owned vehicle for any portion of the trip.

3. Downeaster closes gates across Route 1 (Pepperrell Square) when stopped at Saco

Matter was referred to NNEPRA for possible mitigation steps.

Appears to clear in three cycles except in peak conditions – may become more of an issue if frequency increases.

4. No passenger rail for commuters working in Portland

Downeaster was not designed to be a commuter rail service.

The Zoom bus is a less expensive, more flexible alternative.

5. Ability of OOB stop to provide needed services for Downeaster travelers

NNEPRA staff will evaluate the services available and passengers’ reactions thereto.

6. Potential of other Zoom-based stops/routes along Route 111

YCCAC is considering a recommended establishment of a four (4) round trip per day scheduled on-demand WAVE service between Springvale and the Exit 32 Park and Ride Lot on Route 111.

Housing and population density along Route 111 do not support the expansion of the Zoom Bus service.

7. Potential for adjusted Zoom stop in Saco

Shuttle/Bus Zoom operator is exploring the use of city-owned parking lot next to the existing park and ride lot.
8. Potential for commuter trains to/from Portland
   ➢ Expensive service to provide
   ➢ There is no funding for this option currently
   ➢ Expansion of the ShuttleBus and Zoom Bus services is a less costly alternative

9. Establish free downtown shuttle
   ➢ Downtown shuttles have proven beneficial in numerous communities in the nation
   ➢ Funding is always an issue
   ➢ Developing private sector support for such ventures from Shopping Mall and Downtown merchants and businesses is likely necessary for implementation

10. Establish additional transit/rail stops/shelters/stations
    ➢ The ShuttleBus/Zoom operator has applied for a grant to erect two heated bus shelters
    ➢ As funding materializes, additional shelters may be procured and installed

11. Exploration of transit along remnants of Portland & Rochester (potentially BRT or LRT system) as opposed to new highways
    ➢ Gorham East-West Study will likely include an examination of the former P&R right-of-way at least to Gorham Village
    ➢ Based on a review of aerial photography, there are still long segments of the former R-O-W not built on
    ➢ Should await the results of the Gorham East-West Study

Bike/Ped

1. Public desires more in the way of bicycle and pedestrian facilities in general
   ➢ Narrow lanes on existing streets (including collectors and arterials, as appropriate) to greatest extent possible to stripe shoulders/bike lanes, particularly on Alfred/Main Street
   ➢ One-way loop could increase potential for lane removal and more space for bicycles
   ➢ Potential for median on Main Street in Saco from Pepperell Square to North Street – median could be narrower than existing TWLTL (example – four feet) and allow for
striping of bicycle lanes — median could have plantings such as annuals and would protect pedestrians

➢ The Eastern Trail should be the primary “spine” for Tri-Community area, much like I-95 is for vehicular traffic

➢ The Eastern Trail in the long-term will likely be a non-motorized commuter route (similar to Minute Man Bikeway in northern Boston suburbs) — it should have a solid surface (bituminous asphalt, etc.) to allow for road bicycles (currently stone dust)

➢ The Eastern Trail from Thornton Academy to Cascade Road is about to be designed and constructed, including a bridge crossing of Route 1 — the overpass design should not preclude potential for direct connections to Route 1 from ET — may have access via Seacoast RV Sales

➢ Biddeford could examine Granite Street/remnants of former Atlantic Shore Line for pathway for connections toward the Kennebunks — Granite Street could be a bicycle boulevard

➢ OOB could examine potential for constructing trail connection to ET — could be wider sidewalk/path along Patoine to Ross to Wild Dunes to Dirigo to E. E. Cummings, or along Cascade Road

➢ Biddeford/Saco/MaineDOT/PACTS could work with Pan Am to secure rights to construct alongside the former Eastern RR line south of Thornton Academy — this process would require cantilevering from Saco River RR bridge (or some other mechanism) if trains are to be accommodated long-term

➢ Extend sidewalks from downtown Saco to Route 1 where ET crossing is to take place (identified in PACTS Bike/Ped Plan)

➢ Bike/Ped connections from AMTRAK station on Saco Island — could run alongside Pan Am/Downeaster line or along Water Street and Lincoln Street (identified in PACTS Bike/Ped Plan)
  ▪ Water Street is one-way, 30-36 feet in width — could support full bicycle/ped facilities
  ▪ Lincoln is 30 feet in places curb to curb — narrow lanes could support bike lanes

2. Bike Parking/Storage a Rarity

➢ Provide secure facilities at Transportation Center in Saco, Chamber of Commerce in OOB, and Biddeford Crossing in Biddeford, as well as at Hannaford in Saco
Storage areas should be placed adjacent to major transit stops

Land Use/Regulations/Policies

- Encourage denser land uses similar to Alternative Land Development Areas, with changes to the Ordinance as needed. Zoning should encourage mixed-use development in denser areas
- Denser land use could be achieved with providing density/FAR (floor to area ratio) bonuses for new or infill development, and encouraging transit-based access
- New developments, especially in Alternative development districts, should be planned with transit access in mind, encouraging easy access to buses, etc.
- Incorporate secure bicycle storage facilities in new development requirements
- Transit-based TIF districts can be established (see proposed South Portland rules)
- Keep driveway and street widths to a minimum when possible – reduces pedestrian crossing time
- Extend water/sewer to Alternative Land Use Districts first
- Ordinances in Tri-Community area should encourage use of shared-parking information (ITE/ULI), which would further encourage mixed-use development
- Rule of thumb for the viability of transit service is the existence of between three to five dwelling units per residential acre or 700 square feet of floor area per 1000 square feet of lot area for commercial developments
- Make interconnected sites, driveways, transit access points a priority: municipalities should revisit model of platted streets and broader land development patterns than on a lot-by-lot basis
- Offer reduced parking requirements in downtown areas, increase region over time as other travel modes become more robust
- Discussions regarding Urban Compacts should take place with MaineDOT. Should they be changed? Done on a municipality basis? Abolished entirely?

Growth Reduction Strategies/Transportation Demand Management

- Overall desire to reduce or eliminate peak hour traffic volume increases – minimize need for new transportation infrastructure
- Shift traffic away from Maine in favor of Elm (25% less peak hour traffic on Elm – not hampered by Pepperell Square or rail crossing) to mitigate downtown Biddeford/Saco congestion
- Aggressive TDM plans on a regional level
• Creation of PACTS TDM Advisory Committee – Go Maine, PACTS, municipalities on board
• A PACTS region TDM plan would be the most viable candidate for affecting travel demand; a PACTS TDM policy
• Municipal TDM coordinators, who will provide assistance on topics such as planning assistance, parking requirement reductions, examining updating transit schedules and stops, etc.
• Financial incentives for use of Zoom and other transit, car and van share
• Provision of incentives to be split between municipalities, PACTS, MaineDOT, businesses
• Guaranteed Ride-home programs
• Financial incentives toward biking, walking: coordinate with local sellers of bicycles/footwear
• Coordinate with other advocacy groups, such as Bicycle Coalition of Maine/Community Bicycle Center
• Should have 25-year goal of reducing peak hour traffic volumes by 10 percent, or more aggressively, one percent every two years (closer to 13 percent reduction) – would result in almost no traffic growth in downtown areas
• Work with PACTS/MaineDOT on funding – examine cost of traditional roadway widening – apply 50% of that cost to TDM and other programs
Route 111 Proposed WAVE Service:

The Wheels to Access Vocation and Education (WAVE) service, provided by the York County Community Action Corporation (YCCAC), is a very flexible means of providing transportation in an area that does not have the population or housing density to support fixed route transportation and where trip origins and destinations are in the “many-to-many” category. The current service provides door-to-door service on a demand basis within an hourly scheduled time frame per bus from Sanford-Springvale to two major destinations – Wells and Biddeford.

Several studies have identified the Route 111 corridor between Biddeford and Sanford as suitable for some sort of transit service. Existing population and housing densities along that route don’t currently support fixed route, scheduled transit; however, the WAVE ridership shows that there is significant demand along that corridor to support some “regular” service along the Route. A concept of providing a route-deviation scheduled service for WAVE along the Route for two trips in the morning and two trips in the afternoon is proposed. The service is basically scheduled around arriving and departing ZOOM Express Bus Service between Biddeford and Portland. The proposed schedule is shown in the table below. Funding for the provision of this service needs to be coordinated with the YCCAC.
December 23, 2010

Mr. Carl Eppich, Transportation Planner
PACTS
68 Marginal Way
Portland, Maine 04101

Re: Preliminary Assumptions for Opinions of Cost – Tri-Community Study

Dear Carl:

Gorrill-Palmer Consulting Engineers, Inc. has completed a number of preliminary opinions of probable costs for selected recommendations from the Tri-Community Transportation Study, which are given with some additional detail in the attachment. It is important to note that these items are intended for planning purposes only, with more detailed opinions required prior to final budgeting or design/construction. Costs are typically based on general quantities, costs per square foot, etc., and in some cases, vendor quotes. These costs do not include engineering, right-of-way, environmental or historic impacts, or other additional information that may arise during a more formal preparation of cost opinions.

We hope that these opinions are helpful for planning purposes as the project recommendations move toward implementation.

Sincerely,

Gorrill-Palmer Consulting Engineers Inc.

[Signature]

Thomas L. Gorrill, P.E., PTOE
President

Copy: Greg Tansley, City of Biddeford
Peter Morelli, City of Saco
Victoria Geaumont, Town of Old Orchard Beach

U:\2125\Eppich_12-23-10.doc
### Assumptions for Costs for Tri-Community Study

**1.) Financial Incentives: Communities Buy Passes**  
Note: Construction costs do not include:  
- Engineering  
- R-O-W  
- Environmental  
- Other  
Costs based on 2010 unit prices

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<td>$150 per month</td>
<td>$150</td>
<td></td>
</tr>
<tr>
<td>25 AMTRAK Passes (to Portland)</td>
<td>$113</td>
<td></td>
</tr>
<tr>
<td>$113 per month</td>
<td>$113</td>
<td></td>
</tr>
<tr>
<td>Total Per month</td>
<td>$28,325</td>
<td></td>
</tr>
<tr>
<td>Total Per Year</td>
<td>$339,900</td>
<td></td>
</tr>
</tbody>
</table>

**2.) Employee Benefits for Walking/Biking/Transit**

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Per Employee/Year</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>$25 per month</td>
<td>$25</td>
<td></td>
</tr>
<tr>
<td>200 employees in OOB</td>
<td>200</td>
<td>(Based on 2000 Census workers who used alt modes)</td>
</tr>
<tr>
<td>325 employees in Saco</td>
<td>325</td>
<td>(Based on 2000 Census workers who used alt modes)</td>
</tr>
<tr>
<td>550 employees in Biddeford</td>
<td>550</td>
<td>(Based on 2000 Census workers who used alt modes)</td>
</tr>
<tr>
<td>Total Per Month</td>
<td>$26,875</td>
<td></td>
</tr>
<tr>
<td>Total Per Year</td>
<td>$322,500</td>
<td></td>
</tr>
</tbody>
</table>

**3.) Study for Regional Tolling**

<table>
<thead>
<tr>
<th>Study Description</th>
<th>Duration</th>
<th>Per Hour</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two Months - Nine Weeks of Hours</td>
<td>360</td>
<td>$125</td>
<td>$45,000</td>
</tr>
</tbody>
</table>

**4.) Encourage Routing on Elm Street**

<table>
<thead>
<tr>
<th>Action Description</th>
<th>Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove Spruce St Signals (3 mast arms)</td>
<td>$5,000</td>
<td></td>
</tr>
<tr>
<td>4 overhead signs</td>
<td>$40,000</td>
<td></td>
</tr>
<tr>
<td>Modify striping at three intersections</td>
<td>$5,000</td>
<td></td>
</tr>
<tr>
<td>Coordinate Main and South St Signals</td>
<td>$20,000</td>
<td>(1,000 feet at $10/LF and $5,000 per controller)</td>
</tr>
<tr>
<td>Total for Work</td>
<td>$70,000</td>
<td></td>
</tr>
</tbody>
</table>

**5.) Tri-Community Local Trucking Study**  
(Assumes MTA/DOT have data)

<table>
<thead>
<tr>
<th>Study Description</th>
<th>Duration</th>
<th>Per Hour</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two week study - 40 hours</td>
<td>40</td>
<td>$125</td>
<td>$5,000</td>
</tr>
</tbody>
</table>

**6.) Convert Eastern Trail to Bituminous**

<table>
<thead>
<tr>
<th>Conversion Details</th>
<th>Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>41,000 linear feet</td>
<td>41,000</td>
<td></td>
</tr>
<tr>
<td>10 feet wide</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>$xx per foot</td>
<td>$18.5</td>
<td>(Paving existing surface only - Assume 3&quot; depth @ $100/ton)</td>
</tr>
<tr>
<td>Total for Conversion</td>
<td>$758,500</td>
<td></td>
</tr>
</tbody>
</table>
7.) Commuter Rail Service to Biddeford
(Assumes double-tracking)

17 miles
Approx 1 million per mile*  
Total Cost: $17,000,000

*Based on approx $25 million for 26 miles to Brunswick

8.) Make OOB Year-Round AMTRAK Stop

Insulate 3,600 s.f. Chamber of Commerce $7,500
Add heating system $10,000
Total Cost: $17,500

9.) Expand WAVE Service

50 percent increase in current $276,000 annual cost
Total Cost: $138,000

10.) BSOOB GPS Equipment

Assume 20% more than minimum $60,000 cost
Total Cost: $72,000

11.) Improved Transit Stops

Locations: 12
Unit Cost: $10,000 (Assume $6,240 for shelter)
Total Cost: $120,000

12.) Route Specific Signs

Locations: 12
Unit Cost: $500
Total Cost: $6,000

13.) Passenger Waiting Lights

Locations: 12
Unit Cost: $3,500 ($1200 for Light)
Total Cost: $42,000

14.) Integrated Fare/Pass Structure

Total Cost: To be Determined by PACTS (already examining funding of study)
15.) Signal Preemption

Locations: 1

Unit Cost: $5,000 (Does not include transmitters for busses)

Total Cost: $5,000

16.) Increased Shuttle Bus Frequency

Total Cost: To be provided by BSOOB

17.) Route 1 (Main Street) - Saco (Assume Widening both sides of roadway)

Length: 19,000

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Widening/lf</td>
<td>$79.50</td>
</tr>
<tr>
<td>Drainage/lf</td>
<td>$67.50</td>
</tr>
<tr>
<td>curb/lf</td>
<td>$50.00</td>
</tr>
<tr>
<td>traffic control/mob</td>
<td>$39.40</td>
</tr>
<tr>
<td>Subtotal</td>
<td>$4,492,000.00</td>
</tr>
<tr>
<td>Signals (5)</td>
<td>$750,000.00</td>
</tr>
<tr>
<td>Subtotal</td>
<td>$5,242,000.00</td>
</tr>
<tr>
<td>Contingency</td>
<td>$1,049,000.00</td>
</tr>
<tr>
<td>Total</td>
<td>$6,291,000.00</td>
</tr>
</tbody>
</table>

18.) Expansion of the Park-and-Ride Facility

Assume: Single deck (same cost as downtown Biddeford deck)

Total Cost: $2,400,000

19.) Retime the Intersections in Downtown Biddeford

Locations: 3

Unit Cost: $5,000

Total Cost: $15,000

20.) Remove Spruce Street Signal

Locations: 1

Unit Cost: $5,000

Total Cost: $5,000

21.) Roundabout (Water/Hill/Main)

Total Cost: $2,500,000 (Based on 2008 GPCEI Opinion)

22.) Redirect left turns from Elm Street Left turn

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signage (6)</td>
<td>$3,000</td>
</tr>
<tr>
<td>Restripe</td>
<td>$2,500</td>
</tr>
<tr>
<td>signal modification</td>
<td>$3,000</td>
</tr>
<tr>
<td>Total</td>
<td>$8,500</td>
</tr>
</tbody>
</table>
23.) Extend Left Turn from Elm to Lincoln Street
   Restripe $2,500
   Total Cost: $2,500

24.) Garfield Street
   Lt from Route 5 onto Garfield (100') $125,000
   Rt from Garfield onto Route 112 (100') $45,000
   Total Cost: $170,000

25.) Restripe Main Street
   Restripe $2,500
   Signal Modification $7,500
   Total Cost: $10,000

26.) Dual Left Turn Lanes from Route 112 to Industrial Park Road
   Widening (1500') $450,000
   Signal Modification $125,000
   Total Cost: $575,000

27.) Evaluate turn lanes
   Cost of Design: $5,000
   Narrowing of Street: $50,000
   Total Cost: $55,000

28.) Add Raised Islands on Main Street
   Locations 3
   Unit Cost $20,000
   Total Cost: $60,000

29.) Surface Parking Lot (Doesn't include land acquisition)
   Spaces 150
   Unit Cost $3,000
   Total Cost: $450,000

30.) Parking Garage
   Spaces 386
   Total Cost: $6,100,000 (Based on Downtown Biddeford Parking & Traffic study)

31.) Wayfinding Signage
   Study $25,000
   Signs (50) $25,000
   Total Cost: $50,000
<table>
<thead>
<tr>
<th></th>
<th>Project Description</th>
<th>Length</th>
<th>Unit Cost</th>
<th>Total Cost:</th>
</tr>
</thead>
<tbody>
<tr>
<td>32.)</td>
<td>Pan Am connectin to Eastern Trail (Does not include land acquisition)</td>
<td>11,000</td>
<td>$75</td>
<td>$825,000</td>
</tr>
<tr>
<td>33.)</td>
<td>Restripe Lincoln/Water Street</td>
<td>4,000</td>
<td>$10</td>
<td>$40,000</td>
</tr>
<tr>
<td>34.)</td>
<td>Connection from Overpass to Route 1 (Does not include land acquisition)</td>
<td>250</td>
<td>$75</td>
<td>$18,750</td>
</tr>
<tr>
<td>35.)</td>
<td>Sidewalk Eastern Trail to Downtown)</td>
<td>5,600</td>
<td>$200</td>
<td>$1,120,000</td>
</tr>
<tr>
<td>36.)</td>
<td>Sidewalk to EE Cummings</td>
<td>11,000</td>
<td>$200</td>
<td>$2,200,000</td>
</tr>
<tr>
<td>36.)</td>
<td>Bike Storage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bike Racks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Quantity</strong></td>
<td>20</td>
<td>$500</td>
<td>$10,000</td>
</tr>
<tr>
<td></td>
<td><strong>Unit Cost</strong></td>
<td></td>
<td>$150/Rack for materials</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Cost:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bike Lockers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Quantity</strong></td>
<td>20</td>
<td>$2,500</td>
<td>$50,000</td>
</tr>
<tr>
<td></td>
<td><strong>Unit Cost</strong></td>
<td></td>
<td>$2,000 for Locker+shipping, $500 to install</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Cost:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>$60,000</td>
</tr>
</tbody>
</table>
Appendix C: Meeting Notes