



## **Strategic Prioritization Office of Transportation Local Input Point Assignment Methodology**

### **Introduction**

The Down East Rural Planning Organization (DERPO) is required by state law to develop a local input methodology for prioritizing all transportation projects (highway, bike and pedestrian, public transportation, aviation, rail and ferry) within the RPO boundary that may compete for state and federal funding, and to submit the methodology to the North Carolina Department of Transportation (NCDOT) for approval.

The DERPO has developed this prioritization method in an effort to satisfy the quantitative, data-driven requirements of the legislation while protecting the discretion of local officials by incorporating subjective, qualitative local input where possible.

This process is intended to be open and transparent. As such, all meetings of the Technical Coordinating Committee (TCC) and Transportation Advisory Committee (TAC) are open to the public and public participation will be solicited in accordance with the RPO's previously adopted Public Involvement Policy. In addition, the draft methodology and preliminary point assignments will be posted at the Eastern Carolina Council of Governments' DERPO webpage:

<http://www.eccog.org/planning-and-gis/planning/transportation-planning/derpo/> along with instructions for submitting comments. Comments will be collected by the RPO Coordinator and distributed to the TCC and TAC as part of their normal meeting packets.

### **Schedule**

During every Strategic Prioritization Office of Transportation (SPOT) cycle the DERPO will create a Prioritization Sub-committee where at least one voting member from each of the five counties and the two NCDOT Highway Divisions will participate. This Sub-committee will make the initial draft local point assignments.

At the initial convening of the Sub-committee any changes to Strategic Transportation Improvement legislation or the SPOT formulas, rankings, or process will be reviewed and discussed. Based on that review this methodology will be revisited to make any changes or adjustments necessary to remain in compliance and to optimize our prioritization process to the needs of the DERPO region. Any changes or adjustments will be made available for public comment in accordance with the DERPO Public Involvement Policy and subsequently approved by the TCC and TAC prior to being enacted.

When NCDOT opens the window for submission of new candidate projects the Sub-committee will meet to review existing SPOT projects from every transportation mode with the potential to be removed from the system and new candidate projects from every transportation mode with the potential to be submitted to the SPOT scoring system. The recommendations from this Sub-committee will be presented to the TCC and TAC at their next regularly scheduled meeting for approval. This meeting is open to the public.

After the Regional Impact and Division Needs scores are released by NCDOT the Sub-committee will meet to generate the Local Input Scores based on the scoring criteria described below and consultation with NCDOT Division staff, neighboring MPOs and RPOs, local aviation, rail, ferry, port, and transit operators. As soon as those preliminary scores are calculated they will be posted on the Eastern Carolina Council of Governments' DERPO webpage: <http://www.eccog.org/planning-and-gis/planning/transportation-planning/derpo/> for public review and comment for no less than 30 days. Any public comment gathered during this time will be considered when applying Local Discretionary Points.

The TCC and TAC will review the final Regional Impact and Division Needs Project Scores provided by the Sub-committee and discuss whether to apply Local Discretionary Points at their meetings, which will be public meetings where public comment will specifically be sought on the final scores and where the public comments, and any others received during the prioritization process, will be a basis for applying any Discretionary points. Local Discretionary Points will be discussed in an open meeting and any points assigned and their justifications will be documented in the meeting minutes. Final adjusted scores will be generated based on final scores and Discretionary points and will be posted, with any appropriate justifications necessary, to the RPO website at that time. Final points will be assigned based on final adjusted scores and points will be entered into SPOT Online.

For SPOT 3.0 in 2014 the timeline is as follows:

- Quantitative scores are released for SPOT 3.0 projects by NCDOT (May 14, 2014)
- Proposed Local input points are allocated to SPOT 3.0 projects (May-June 2014)
- A 30 day public comment period is provided to review and comment on local input point allocations (June 2014)
- DERPO TAC endorses final local input point allocations and submits them to NCDOT (July 24, 2014)
- Final scores are issued to SPOT 3.0 projects and posted on the DERPO website (August 2014)

## **Scoring Criteria**

The following scoring criteria will be used to generate a raw score for each transportation project, regardless of mode. Each project will receive a preliminary and final score.

For the Quantitative Score the DERPO will use quantitative criteria developed by NCDOT and the Eastern NC MPO/RPO Coalition. These criteria provide an adequate quantitative assessment of the

transportation projects in the RPO area. The SPOT Score will be equal to 50% of the Total Project Score. This aspect of the score will be calculated using this formula:

$$\text{Quantitative Score} = [(\text{SPOT Score} / \text{Max SPOT Score}) \times 100] \times 50\%$$

For Regional Impact projects the Max SPOT Score = 70

For Division Needs projects the Max SPOT Score = 50

$$\text{Example Quantitative Regional Score: } [(65/70) \times 100] \times .5 = 46.43$$

For the Qualitative Score the DERPO Sub-committee selected six factors in our geographic area to evaluate local projects on across all modes of transportation. This evaluation will be based on access and connections provided by the project to those six factors that promote and foster our communities in Eastern North Carolina. Those factors are: Agriculture, Education, Health Care, Job Centers, Military and Ports, and Tourism. Each of those factors have been identified in the following ways:

### **Agriculture**

ESRI's Community Analyst is a web-based mapping program that can search for and identify the location of businesses by NAICS (North American Industry Classification System) code in a defined geographic area. This program extracts business data which is current as of January 2013 from a comprehensive list of businesses licensed from Dun & Bradstreet, a leading source of commercial information and insight on businesses.

Community Analyst was used to identify a total of 435 agricultural businesses with 3-digit NAICS codes of 111 (crop production), 112 (animal production and aquaculture), 113 (forestry and logging) and 115 (support activities for agriculture and forestry) in the DERPO area. These results were exported into an Excel spreadsheet where the name, address, 6-digit NAICS code and sales volume of each identified business was listed. The top earning businesses whose combined sales volume equaled approximately 50% of the total sales volume of all 435 businesses in the DERPO area were then identified. These 18 identified businesses were then mapped in ArcGIS, a mapping software program, according to their address, parcel spatial data, aerial imagery, and GoogleMaps. Access points to the transportation network for each mapped business were then identified.

### **Education**

Community colleges, universities, and their off-campus centers or satellite campuses in the DERPO area were mapped in ArcGIS using spatial data downloaded from NC OneMap (a statewide data and map service website organized by government agencies, the private sector and academia), the address listed on the college/university's website, aerial imagery, and GoogleMaps.

## **Health Care**

Hospitals in the DERPO area were mapped in ArcGIS using spatial data downloaded from NC OneMap. According to the NC OneMap website, the downloaded hospitals spatial dataset include all general medical/surgical hospitals and other types of hospitals if they were represented in datasets sent by the state of North Carolina. Therefore, nursing homes, urgent care facilities, and some specialty hospitals were excluded from this spatial dataset. Although originally included in this spatial dataset, mapped naval hospitals were removed.

## **Job Centers**

A statewide spatial dataset containing employment data by 2010 census blocks was obtained from the NCDOT. This dataset, known as the LEHD Origin-Destination Employment Statistics (LODES) Dataset, was originally obtained from the Longitudinal Employer-Household Dynamics (LEHD) program. The LEHD program is part of the Center for Economic Studies at the US Census Bureau. This program combines federal, state and Census Bureau data on employers and employees under the Local Employment Dynamics (LED) Partnership. Under the LED Partnership, states share the Quarterly Census of Employment and Wages (QCEW) data with the Census Bureau. After obtaining this spatial dataset from NCDOT, only the census blocks with 100 employees or greater which are located in the DERPO were selected.

## **Military & Ports**

Military locations in the DERPO area were identified using the federal lands in North Carolina spatial dataset downloaded from NC OneMap. Using the original downloaded spatial dataset, federal lands which are in the DERPO area and are military locations were mapped in ArcGIS. Mapped military locations which were identified as US Army Reserve Centers were then removed. The Emerald Isle and Hobucken US Coast Guard Stations were then mapped and therefore added to this spatial dataset. Entry gate or access points from these military locations to the transportation network were then identified.

The Port of Morehead City is the only port located in the DERPO area and has only one entry gate.

Two NC Ferry routes exist in the DERPO area with three boarding docks in operation. The access points from the dock to the transportation network were identified.

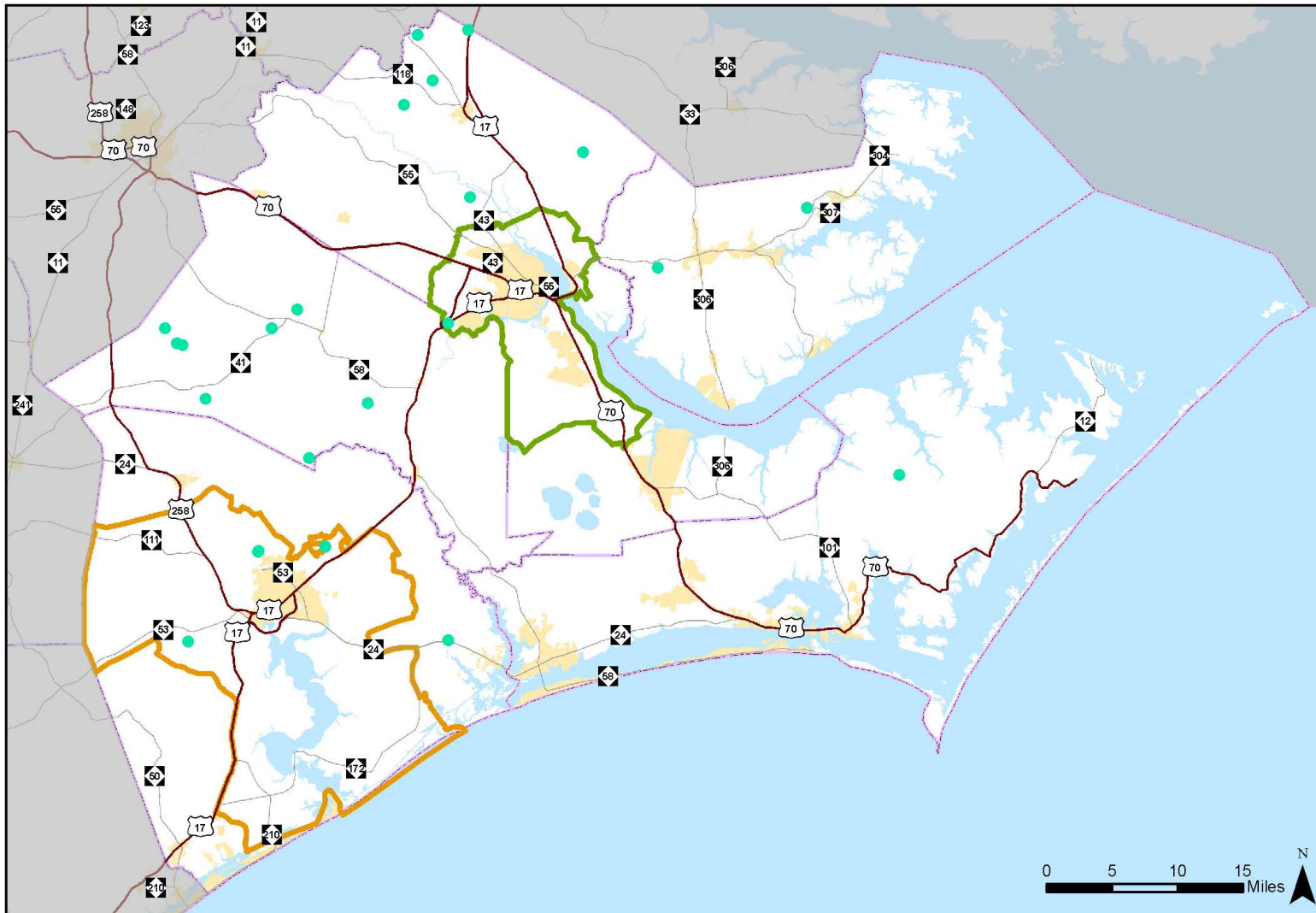
## **Tourism**

Tourist destinations in the DERPO were identified as the points of interest mapped on the Croatan Regional Bicycle Routes and Trails map. This map is associated with the Croatan Regional Bicycle Plan and Croatan Regional Trails Plan. Both of these plans encompassed a study area that included the five counties which make up the DERPO. These tourist

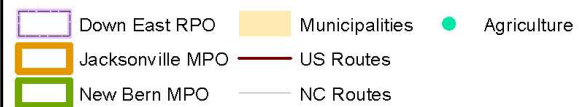


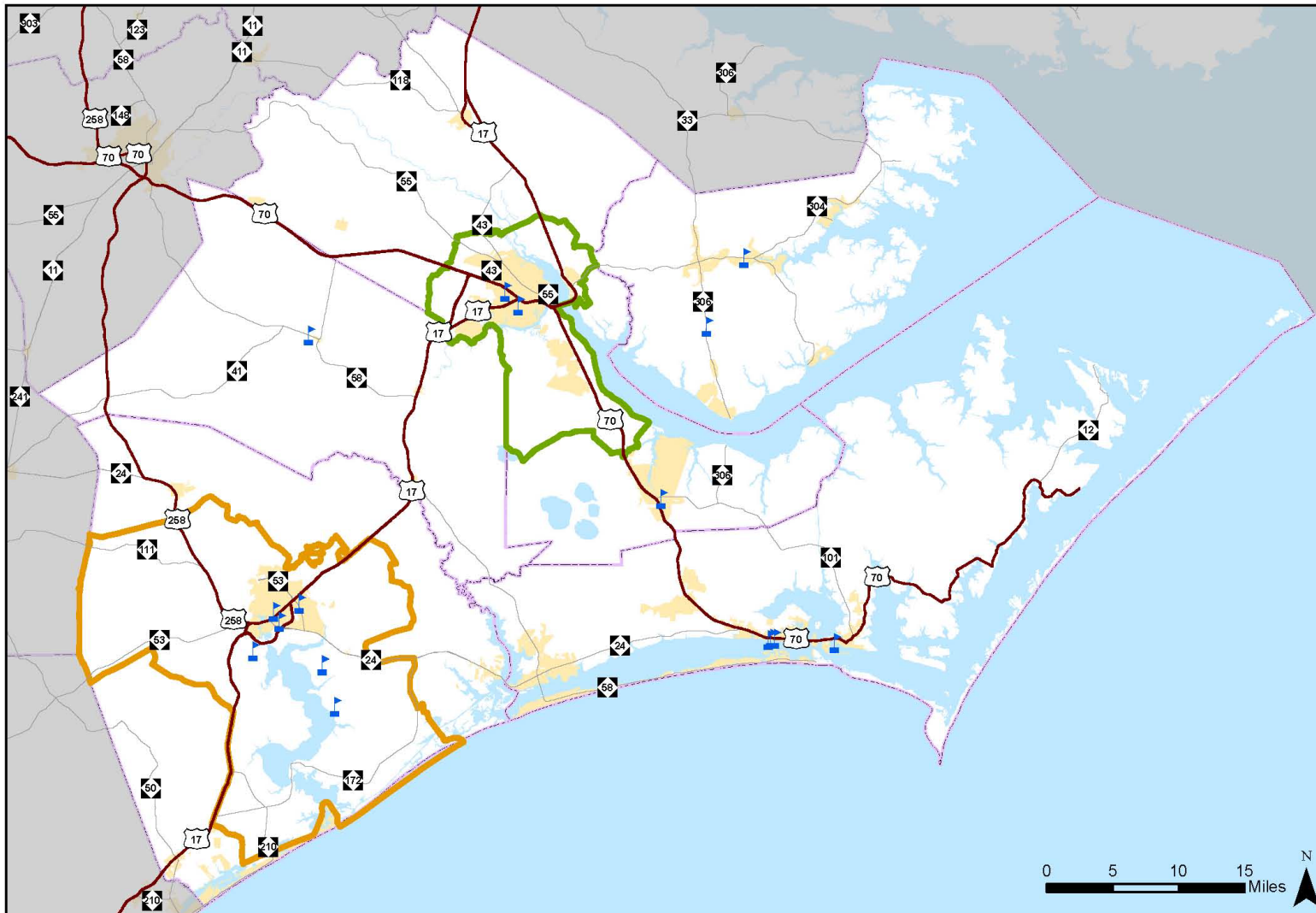
destinations include state and national parks, event centers, museums, historical sites, educational sites, visitor centers, etc.

Once all the access points to these locations were identified and mapped, the 2010 US Census Block each access point is contained in was then selected for evaluation and scoring purposes. The maps of these six factors and corresponding Census Blocks are attached.

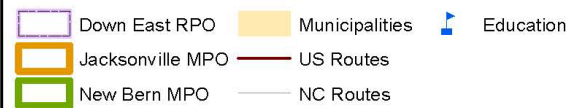


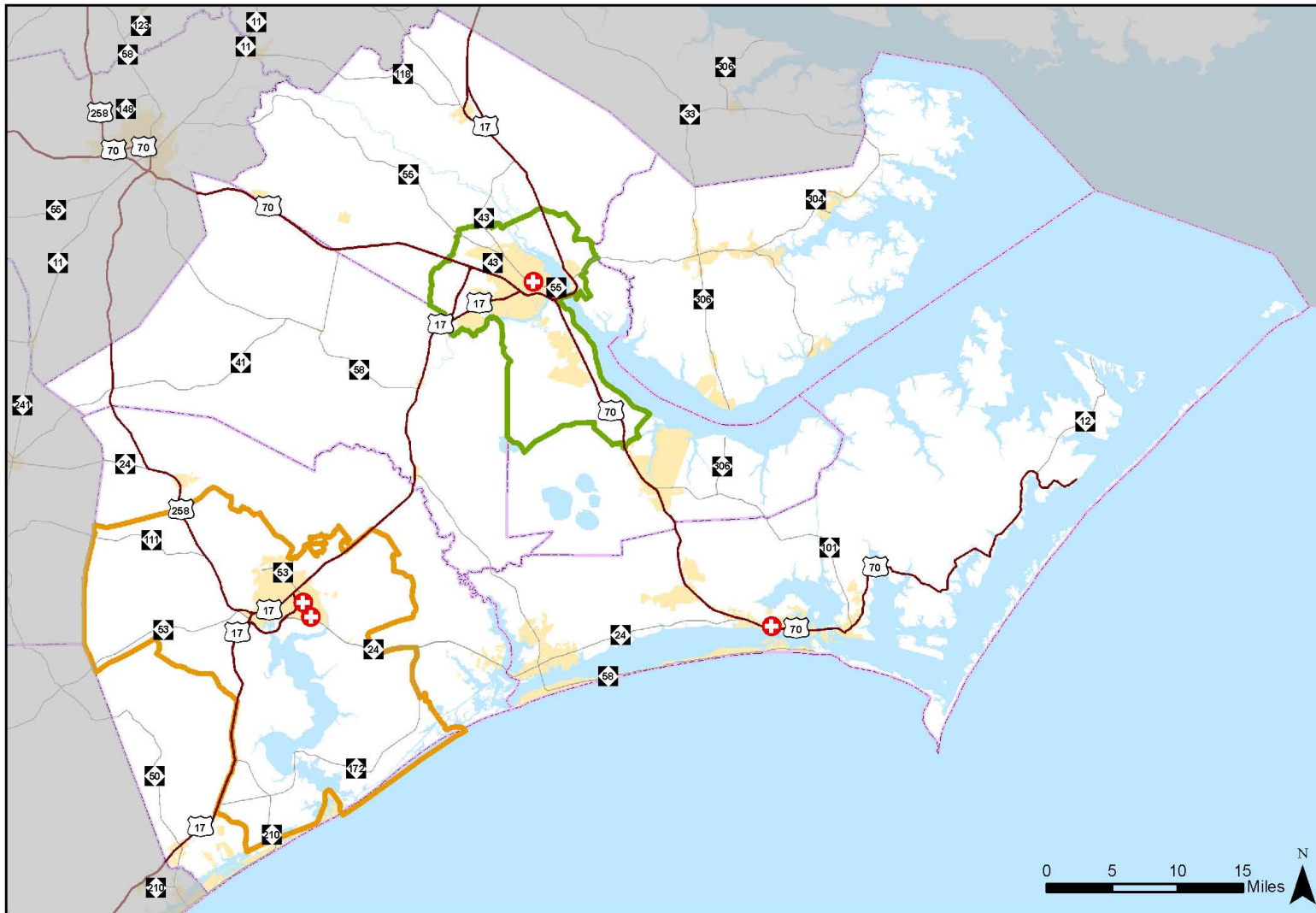
## Agriculture





## Education

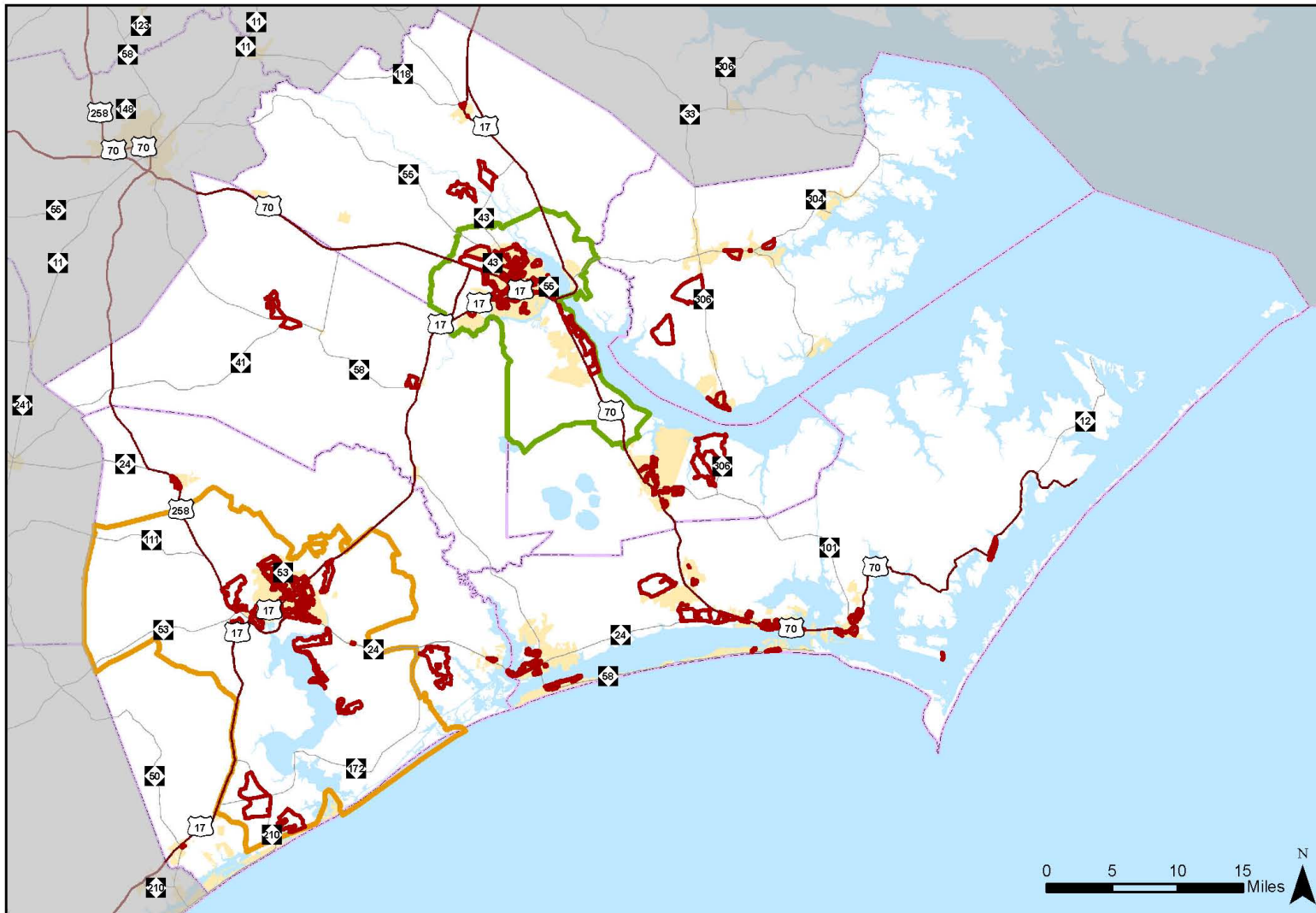




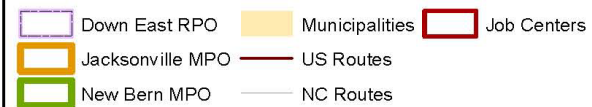
## Health Care

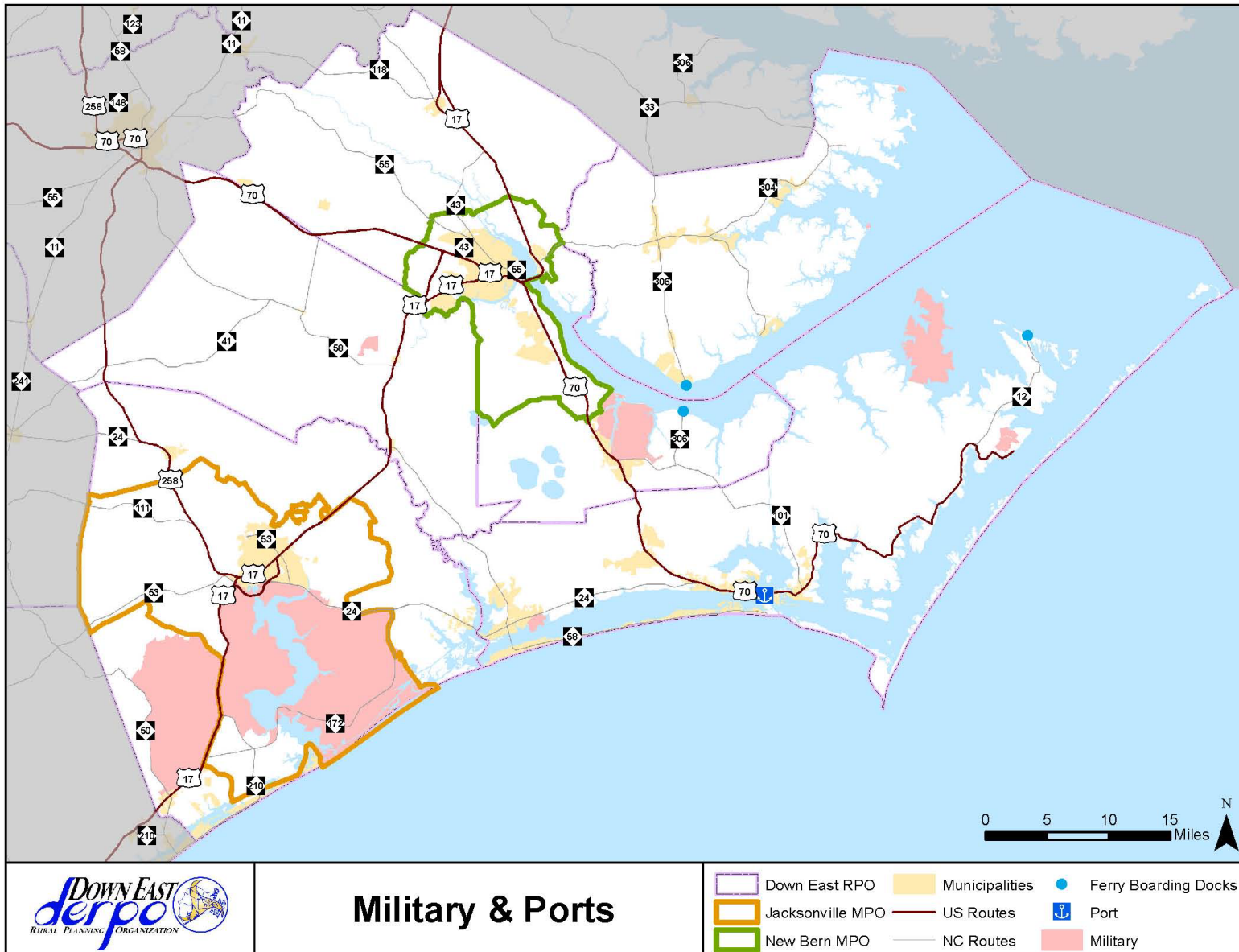


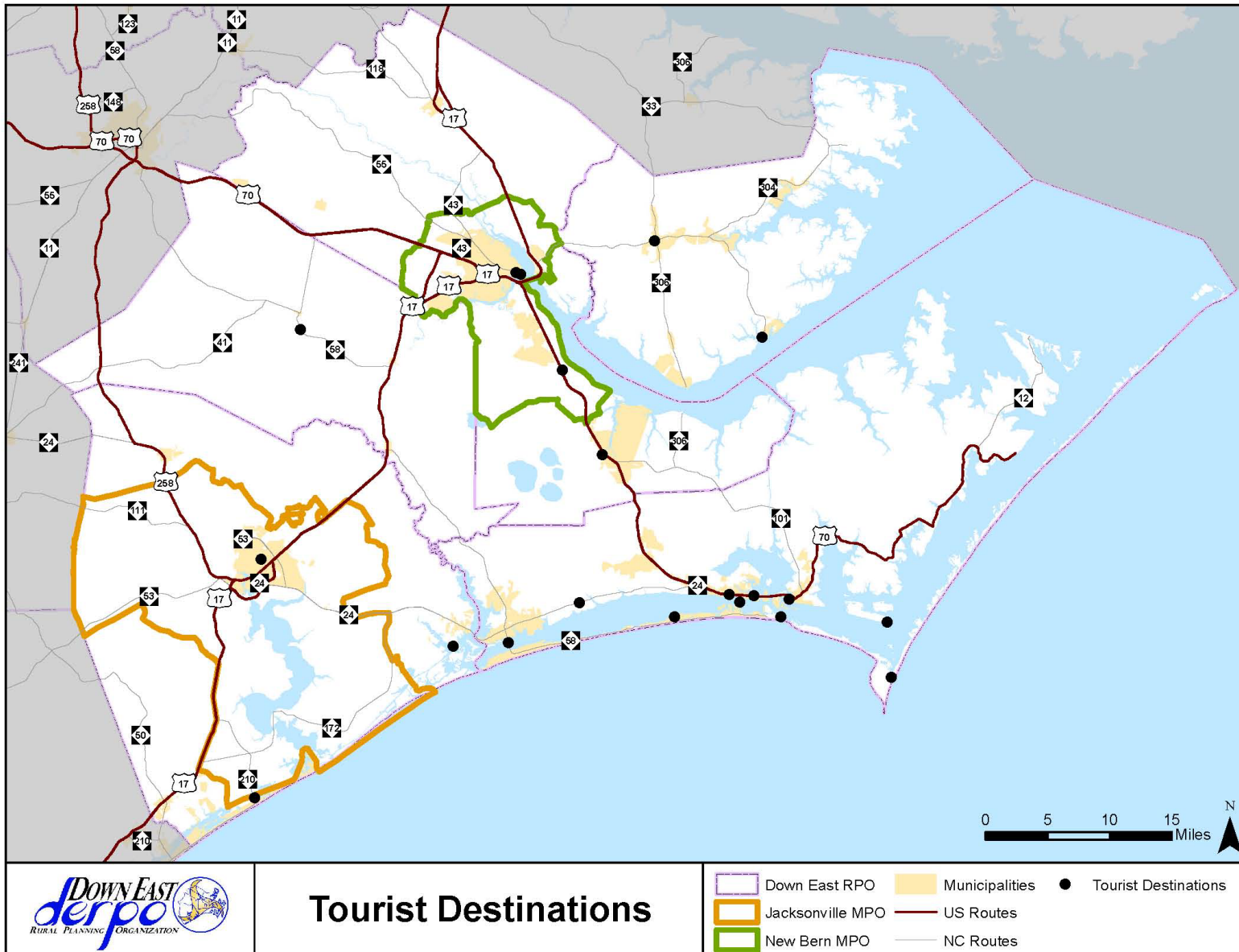




## Job Centers













The Sub-committee created a hierarchy among these factors. Every occurrence of an access point in a given US Census Block for a Military Installation, NC Port or Ferry Dock is worth 30 points and every US Census Block with 100 employees or greater is worth 30 points. Every access point in a given US Census Block to a Tourist Destination or an Agricultural business is worth 20 points. Every access point in a given US Census Block to a Health Care facility or an Education Center is worth 10 points.

Projects of all modes are then mapped to determine their proximity to these identified US Census Blocks containing one or more of the six factors described above. Transportation projects that intersect, parallel or touch one of the selected US Census Blocks containing one of the six factors get a tally of the total points assigned in the scoring hierarchy. Scores are aggregate so every instance is counted towards the total. No project can exceed a maximum of 100 total points. The Qualitative Score will be equal to 50% of the Total Project Score. For example, Project A intersects a Census Block with a Hospital, parallels a Census Block with a Tourists Destination and touches a Census Block at the NC Port so it would get a qualitative score of 30 points.

$$\text{Census Block Score} = [(\text{Factor Score} + \text{Factor Score} + \text{Factor Score}) \times 100\%] \times 50\%$$

$$\text{Project A Score:} \quad [(10+20+30) \times 1.0] \times 0.5 = 30$$

Transportation projects that do not intersect, parallel, or touch one of the selected US Census Blocks containing one of the six factors but, are within the same US Census Block Group as those US Census Blocks containing one of the six factors get a tally of 60% of the total points assigned in the scoring hierarchy. Scores are aggregate so every instance is counted towards the total. No project can exceed a maximum of 100 total points. For example, Project B is in a Census Block Group with a College and a Military base so it would get a qualitative score of 12 points.

$$\text{Census Block Group Score} = [(\text{Factor Score} + \text{Factor Score} + \text{Factor Score}) \times 60\%] \times 50\%$$

$$\text{Project B Score:} \quad [(10+30) \times 0.6] \times 0.5 = 12$$

Transportation projects that do not intersect, parallel, or touch one of the selected US Census Blocks containing one of the six factors but, and are not within the same US Census Block Group as those US Census Blocks containing one of the six factors, but are within the same US Census Tract as those US Census Blocks containing one of the six factors get a tally of 30% of the total points assigned in the scoring hierarchy. Scores are aggregate so every instance is counted towards the total. No project can exceed a maximum of 100 total points. For example, Project C is in a Census Tract with an Agricultural center and a Job Center so it would get a qualitative score of 7.5 points.

$$\text{Census Tract Score} = [(\text{Factor Score} + \text{Factor Score} + \text{Factor Score}) \times 30\%] \times 50\%$$

$$\text{Project C Score:} \quad [(20+30) \times 0.3] \times 0.5 = 7.5$$

Once a Quantitative and a Qualitative Score are calculated for every transportation project, those two figures are summed for a Total Project Score.

$$\text{Total Project Score} = (\text{Quantitative Score} + \text{Qualitative Score})$$

$$\text{Project A Score:} \quad (46.43 + 30) = 76.43$$

At this time projects are eligible for the equivalent of 40% (plus or minus) of the Total Project Score in Discretionary Points. These Discretionary Points are for projects of regional significance or other special consideration, provided that the TAC documents the rationale and that such documentation is available for public inspection. Special considerations included high dollar projects that would overwhelm the funding available for the region, projects that are not far enough along in the planning process to warrant funding, or projects that have strong public support for example. The purpose of these points are to provide local oversight to the data-driven process, to compensate for any peculiar scores where the prioritization methodology fails to operate as expected, and to ensure appropriate projects at the relevant tier. In particular, the Discretionary Points are foreseen as a way to eliminate or downgrade extremely expensive projects at the Division Needs tier where a selected project would overburden Division Needs funds. Since Discretionary points must be agreed upon by the majority of TCC and TAC members, it is envisioned as “safety net” to correct problems on which there is high concurrence, rather than a way to simply modify the adopted methodology.

All projects across all modes are then sorted in descending order from highest score to lowest score for evaluation. The projects are then assigned Local Input Points in descending order starting with the highest scoring project getting the maximum 100 points and the second highest scoring project getting 99 points etc. until the DERPO allotment of 1400 Regional Impact Local Input Points and 1400 Division Needs Local Input Points are exhausted.