Strategic Healthcare Consultants

December 30, 2017

Gregory F. Yakaboski, Project Analyst
Healthcare Planning and Certificate of Need Section
2704 Mail Service Center
Raleigh, NC 27699-2704

Re: Comments Regarding Certificate of Need Applications that include
Wilmington SurgCare # O-11437-17
New Hanover Regional Medical Center # O-11434-17
New Hanover Surgical Center # O-11444-17
Wilmington ASC # O-11441-17

Dear Mr. Yakaboski:

I am writing on behalf of Wilmington Surgery Center, L.P. d/b/a/ Wilmington SurgCare to submit comments regarding the above listed CON project applications. These comments are submitted in accordance with N.C. GEN STAT. § 131E-185(a1)(1).

Thank you for your consideration of this information.

Sincerely,

David J. French
Consultant to Wilmington SurgCare

Wilmington SurgCare Comparative Analysis of the Competing Applications that include Wilmington SurgCare # O-11437-17, New Hanover Regional Medical Center # O-11434-17, New Hanover Surgical Center # O-11444-17 and Wilmington ASC # O-11441-17.

Wilmington SurgCare provides the following comparative comments regarding the four applications:

Geographic Access / Traffic Congestion - The applications by Wilmington SurgCare, New Hanover Regional Medical Center (NHRMC) and New Hanover Surgical Center are equally effective options regarding geographic access / traffic congestion. The Wilmington ASC (WASC) proposed location at 4310 Carolina Beach Road is the least effective alternative due to severe traffic congestion as documented in Attachment 1. The Wilmington Urban Area Metropolitan Planning Organization 2016 Biennial Data Report identified the Codington Elementary School (that is immediately adjacent to the WASC proposed location) **as a hotspot for traffic congestion with no alternate routes**. Peak times of traffic congestion on Carolina Beach Road are 7:00-9:00AM / 4:45-6:45PM.

Conformity to CON Review Criteria – Wilmington SurgCare's application is conforming to all CON Review Criteria. The New Hanover Regional Medical Center (NHRMC) is nonconforming to Criteria 1, 3, 4, 5, 6, 7 and 18a. The New Hanover Surgical Center application (NHSC) application is non-conforming to Criteria 1, 3, 4, 5, 12 and 18a. The WASC application is non-conforming to Criteria 1, 3, 4, 5, 7, 13c and 18a.

New Alternative Provider – The WASC and NHSC proposals are new alternative providers. Wilmington SurgCare and NHRNC are existing providers. However, the WASC and NHSC applications are nonconforming to multiple CON criteria and are not approvable proposals. Consequently, this comparative factor is not meaningful.

Physician Support – Wilmington SurgCare's application includes 39 physician letters of support and is the most effective alternative. The NHRMC application contains only 3 letters of support from physicians and is the least effective application.

Surgical Specialties in an Ambulatory Surgical Facility – Wilmington SurgCare's application is comparatively superior because it will provide 12 surgical specialties including anesthesiology/pain management, gastroenterology. general surgery, vascular surgery, gynecology, neurology, ophthalmology, orthopaedic surgery, plastic surgery, otolaryngology, podiatry surgery, and urology. The NHRMC description of surgical services is inaccurate and incomplete. WASC's proposal includes a broad range of surgical specialties except gynecology. The NHSC application proposes to provide only one surgical specialty and is the least effective proposal for an ambulatory surgical facility.

Percent of Total Facility Cases Performed in ORs – The need determination in the 2017 State Medical Facilities Plan is for one operating room. Existing providers are free to add procedure rooms without having to seek CON approval if the capital costs are less than the CON regulatory threshold. The applicants in this review were not restricted from proposing to add their proposed OR to their existing facility or to relocate existing ORs and GI endoscopy procedure rooms or proposing to include additional procedure rooms. However, it is the utilization of the proposed operating rooms that respond to the need determination in the SMFP and should be the primary emphasis of the Agency's analysis of the applications' conformity to the CON criteria.

For purposes of the comparative analysis in this review for one operating room need determination, the applications that project to serve the highest percentages of patients in ORs are generally more effective. The NHRMC proposal projects 100 percent of its cases to be performed in its ORs and is the most effective alternative. The Wilmington SurgCare application projects 97.45 percent of its cases to be performed in licensed ORs and is the second most effective application. The WASC application projects only 9.87 percent of its total cases to be performed in its OR and is the least overall effective proposal.

Medicare Access – Wilmington SurgCare's application projects the highest percentage of Medicare patients utilizing its ORs and is thus the most effective alternative. The WASC projects the second lowest percentage access to its OR for Medicare patients.. The NHSC application projects the lowest Medicare percentage for its OR and is the least effective application.

Medicaid Access – The NHRMC and NHSC applications project the highest percentages of Medicaid access for its ambulatory surgery surgical cases. The WASC application projects the lowest Medicaid access.

Financial Comparisons - The four applicants in this review were free to select the types of surgical specialties and the facility alternatives (hospital vs ambulatory surgical facility) for each of their proposed projects. Consequently the differences in the types of surgical services should not preclude a financial comparative analysis that is conclusive. Just as Criterion 5 (financial feasibility) is applicable to all of these applications, the comparison of financial metrics is relevant.

Projected Average Gross Revenue per OR Case – The NHSC application projects the lowest average gross revenue per case and is the most effective. The NHRMC application projects the highest average gross revenue per case and is the least effective.

Projected Average Net Revenue per OR Case – Wilmington SurgCare's application projects the lowest average net revenue per case and is the most effective proposal. The NHRMC application projects the highest average net revenue per case and is the least effective proposal.

Projected Average Cost per OR and Procedure Room Case – The WASC application projects the lowest average expense per case. However, the WASC application is not based on reasonable expense projections regarding staffing. The Wilmington SurgCare application projects the second lowest average expense per case and is the most effective proposal in this review.

Summary - The Wilmington SurgCare is the comparatively superior application as follows:

- Conformity to all CON Review Criteria
- Demonstration of physician support
- Patient access to the most surgical specialties in an ambulatory surgical center
- Highest percentage of Medicare access
- Lowest projected average net revenue per OR case
- Second highest percentage of total cases performed in ORs

Comparative Analysis

	Wilmington SurgCare # O-11437-17	**NHRMC # O-11434-17**	**New Hanover Surgical Center # O-11444-17**	**Wilmington ASC #O-11441-17**
Project Descriptions	Add one OR to existing ASC for a total of 11 ORs and one procedure room	Add one OR to existing hospital for a total of 39 ORs	Develop ASC with one OR and two procedure rooms	Develop ASC with one OR, three licensed multispecialty GI Endoscopy procedure rooms and three procedure rooms
Project Locations	1801 S. 17th St, Wilmington	2131 S. 17th St. Wilmington	2716 Ashton Drive Wilmington	4301 Carolina Beach Road, Wilmington
Geographic Location Traffic Conditions	Moderate Traffic	Moderate Traffic	Moderate Traffic	Severe Traffic Congestion
Year 1 Operational Dates	1/1/2021	7/1/19	1/1/2020	1/1/2020
Total Capital Costs	$1,097,511	$1,300,000	Lessor $4,968,308 Lessee $1,218,957	Wilmington Properties $2,150,729 Wilmington ASC LLC $13,387,950
Conformity to CON Criteria	Conforming to all CON Review Criteria	Non-conforming to multiple criteria including 1, 3, 4, 5, 6, 7, and 18a	Non-conforming to multiple criteria including 1, 3, 4, 5, 12, and 18a	Non-conforming to multiple criteria including 1, 3, 4, 5, 7 13c and 18a
Patient Access to Alternative Provider	Existing Provider	Existing Provider	New Alternative	New Alternative
Physician Support	39 physician support letters including pathologist (7), radiologist (1)	3 physician support letters	15 physician support letters	30 physician support letters

Surgical Specialties	Anesthesiology/pain management, gastroenterology. general surgery, vascular surgery, gynecology, neurology, ophthalmology, orthopaedic, plastic, otolaryngology, podiatry, urology (12)	"Entire suite of surgical solutions" listed on page 10 of the application that lack orthopaedic, podiatry, gastroenterology	Orthopaedic (1)	Neurosurgery, orthopaedics, ophthalmology, plastics, oral/dental, urology, general surgery, vascular, podiatry, GI endoscopy/colorectal surgery (10)
Percent of Total Facility Cases Performed in ORs	97.45%	100%	82.97%	9.87%
Access by Underserved Groups (OR Cases)	Ambulatory Self / Indigent/Charity 1.24% Medicare 51.26% Medicaid 7.79%	Ambulatory Self / Indigent/Charity 4.6% Medicare 50.6% Medicaid 11.2% Inpatient Self / Indigent/Charity 3.6% Medicare 46.0% Medicaid 6.9%	Ambulatory Self / Indigent/Charity 3.4% Medicare 12.9% Medicaid 10.5%	Ambulatory Self / Indigent/Charity 6.01% Medicare 27.97% Medicaid 5.67%
Projected Average Gross Revenue Per OR Case	Ambulatory YR 1 $10,544 YR 2 $11,070 YR 3 $11,623	Ambulatory 2019-20 YR 1 $18,183 2020-21 YR 2 $19,092 2021-22 YR 3 $20,047 Inpatient 2019-20 YR 1 $68,619 2020-21 YR 2 $72,654 2021-22 YR 3 $75,653	Ambulatory 2020 YR 1 $4,913 2021 YR 2 $4,987 2022 YR 3 $5.061	Ambulatory YR 1 $9,322 YR 2 $9,441 YR 3 $9,584
Projected Average Net Revenue Per OR Case	Ambulatory YR 1 $1,549 YR 2 $1,560 YR 3 $1,569	Ambulatory 2019-20 YR 1 $5,249 2020-21 YR 2 $5,367 2021-22 YR 3 $5,487 Inpatient 2019-20 YR 1 $20,054 2020-21 YR 2 $20,520 2021-22 YR 3 $20,992	Ambulatory 2020 YR 1 $2,318 2021 YR 2 $2,352 2022 YR 3 $2,388	Ambulatory YR 1 $4,013 YR 2 $3,993 YR 3 $3,994
Projected Average Cost per OR and Procedure Room Case	Ambulatory YR 1 $1,401 YR 2 $1,387 YR 3 $1,382	Ambulatory and Inpatient Combined YR 1 $3,857 YR 2 $3,833 YR 3 $4,011	Ambulatory 2020 YR 1 $1,701 2021 YR 2 $1,625 2022 YR 3 $1,565	Ambulatory YR 1 $1,187 YR 2 $1,140 YR 3 $1,143

APPLICATION-SPECIFIC COMMENTS

Wilmington SurgCare Comments Specifically Regarding New Hanover Regional Medical Center (NHRMC), Project ID # O-11434-17

Criterion 1

The NHRMC application is nonconforming to Criterion1 and Policy GEN-3. The applicant does not adequately demonstrate how its projected volumes incorporate the concept of maximum value for resources expended. The applicant does not adequately demonstrate the need to add one OR to its existing facility because its utilization methodology is based on erroneous assumptions. Therefore, the applicant fails to adequately demonstrate how the proposed project will maximize healthcare value for resources expended in meeting the need identified in the 2017 SMFP. The discussion regarding analysis of need, including projected utilization, found in Criterion 3 is incorporated herein by reference. Therefore, the application is not consistent with Policy GEN-3.

Criterion 3

The NHRMC application erroneously calculates the need for an additional operating room at the hospital by relying upon the incorrect assumption that its two open-heart operating rooms (ORs) should be excluded from its planning inventory and utilization methodology calculations. NHRMC uses an adjusted total of 32 ORs based on the exclusion of 3 C-section ORs, 1 trauma OR and 2 open-heart ORs from its current total inventory of 38 ORs. This way of calculating its OR capacity is inconsistent with the methodology and assumptions in the 2017 State Medical Facilities Plan that only exclude the 3 C-section ORs and 1 trauma OR.

Step 4 – Inventory of Operating Rooms (Columns M through S, Table 6B)

h. List the number of operating rooms by type in each operating room service area by summing the following for all licensed hospitals and ambulatory surgery facilities:

- Number of Inpatient Operating Rooms (Column M)
- Number of Ambulatory Operating Rooms (Column N)
- Number of Shared Operating Rooms (Column O)

i. For each operating room service area, exclude the number of dedicated C -Section operating rooms as summed from the Hospital License Renewal Application. (Column P)

j. For each operating room service area, exclude one operating room for each Level I and Level II Trauma Center and one additional operating room for each designated Burn Intensive Care Unit. (Column Q)

The erroneous assumptions for the NHRMC methodology cause all of the applicant's methodology on pages 45 to 46 (Steps 1, 2 and 3) to be incorrect.

In Step 4, NHRMC's application fails to explain why it is reasonable to project that the expected shift of surgery from the hospital to an ambulatory surgery center would only

involve future inpatient cases. This shift of inpatient cases was not what was predicted in the Wilmington SurgCare application because “elective surgery cases” are primarily those that could be performed on an outpatient basis at either a hospital or an ambulatory surgery center. Consequently Step 4 of the NHRMC is also incorrect.

The numbers of projected cases provided in Steps 5 and 6 (pages 48 to 50 of the NHRMC application) are clearly erroneous because these were derived from the preceding steps that each included incorrect assumptions. Therefore it follows that the incorrect assumptions and projections in Steps 1 through 6 also cause the NHRMC representations on page 51 to be unreliable. The numerous errors in the NHRMC methodology and assumption cause the application to be unapprovable.

Criterion 4

The NHRMC application is non-conforming to Criterion 4 because the utilization projections are not credible and the financial projections are unreliable. An application is not an effective alternative if it fails to demonstrate financial feasibility.

Criterion 5

The NHRMC application is non-conforming to Criterion 5 because the utilization projections are not credible which then causes the financial projections to be unreliable. NHRMC fails to demonstrate that its financial projections are reliable for the following reasons:

- the financial assumptions for the proposed service component fail to explain if the gross revenue, net revenue and expense per case include or exclude the open-heart cases.
- the financial assumptions for the proposed service component fail to include employee training and professional fees even though these components are discussed in the application narrative.

Criterion 6

The NHRMC application is non-conforming to Criterion 6 because the utilization projections are unreliable and the applicant does not provide an accurate assessment of its total current OR inventory for planning purposes. The applicant has the responsibility of demonstrating conformity to the CON Criteria and the NHRM application fails to provide the requisite demonstration.

Criterion 7

The NHRMC staffing information is unreliable because the applicant fails to discuss if the current and projected staffing includes or excludes the staff for the C-section operating rooms, the two open heart operating rooms and the one operating room that is allocated for trauma cases. Given the circumstance that NHRMC has not correctly calculated its operating room inventory, the current and projected staffing numbers are unreliable.

Criterion 18a
As discussed in the Criteria 3, 4, and 5 comments, the utilization projections are not credible and the financial projections are unreliable. Therefore the information provided by NHRMC is not reasonable and credible and does not adequately demonstrate that any enhanced competition includes a positive impact on the cost-effectiveness.

10A NCAC .2103(b) and (f) Performance Standards
The NHRMC application does not adequately demonstrate that its projected utilization is based on reasonable and adequately supported assumptions. The discussion regarding projected utilization found in Criterion 3 is incorporated herein by reference. Therefore, the application is not conforming to these Rules.

Wilmington SurgCare Comments Specifically Regarding New Hanover Surgical Center (NHSC), Project ID # O-11444-17

Criterion 1

The NHSC application is nonconforming to Criterion1 and Policy GEN-3. The applicant does not adequately demonstrate how its projected volumes incorporate the concept of maximum value for resources expended. The applicant does not adequately demonstrate the need to develop an ASC with one operating room and two procedure rooms. Therefore, the applicant fails to adequately demonstrate how the proposed project will maximize healthcare value for resources expended in meeting the need identified in the 2017 SMFP. The discussion regarding analysis of need, including projected utilization, found in Criterion (3) is incorporated herein by reference. Therefore, the application is not consistent with Policy GEN-3.

Criterion 3

The NHSC application is nonconforming to Criterion 3 because the applicants fail to provide utilization projections that are based on reasonable assumptions. The NHSC projections are based on the assumptions of a shift of 75% shift in Year 1, an 80% shift in Year 2 and an 85% shift in Year 3 of orthopedic cases from the hospital to the proposed ASC; these assumptions are not adequately supported. Not all orthopedic patients are good candidates for outpatient surgery in a freestanding ambulatory surgery center (ASC). Patients with comorbidities or a history of significant health issues, such as cardiac problems, are likely not appropriate surgical candidates for the ASC. Patients with high body mass index and patients with pain medication dependence are also at higher risk for complications. The application fails to provide any credible rationale for these large shifts of its orthopedic cases.

The NHSC assumptions regarding the expected percentages of patients to shift from Onslow and Pender Counties are similarly unreliable. Simply assigning a more conservative percentage to the Onslow and Pender County surgery volumes as compared to the New Hanover volumes does not make any of the assumptions more reasonable.

The applicants' assumptions and methodology also fail to take into account that patients have the option to research what existing ambulatory surgical facilities have already obtained CMS certification, accreditation and payor agreements. The proposed NHSC project (with only one OR) will not have these qualifications throughout its initial year of operation. Therefore the Year 1 expected numbers of patients from New Hanover, Pender and Onslow Counties are not credible. Both New Hanover Regional Medical Center and Wilmington SurgCare will be better options to patients as compared to the proposed NHSC that has the least facility capacity and minimal payor arrangements.

Criterion 4
The NHSC application is non-conforming to Criterion 4 because the utilization projections are not credible and the financial projections are unreliable. An application is not an effective alternative if it fails to demonstrate financial feasibility.

Criterion 5
The NHSC application is non-conforming to Criterion 5 because the utilization projections are not credible which thus causes the financial projections to be unreliable. NHRMC fails to demonstrate that its financial projections are reliable for the following reasons:

- The payor percentages for the proposed project in Year 1 are unreasonable and inaccurate because NHSC will not have Medicare, Medicaid, and payor agreements in place for the entire year.
- The applicant states that some patients will stay in the facility for up to 23 hours but fails to provide adequate staffing; the number of patients is not quantified and staffing requirements are not defined.
- The building lease expense is unreliable because it is not based on any square footage figures or lease rates.
- It is unclear if the building lease expense includes the common areas that include the lobby area, elevators and stairs that are shown in the facility plans. Therefore the proposed project is not based on reasonable lease projections.

Criterion 7
The NHSC application is nonconforming to Criterion 7 because the staffing information is unreliable; the application fails to provide adequate staffing for the patients that are projected to stay up to 23 hours. If one assumes that 10% of the patients in Year 3 will have an extended stay it would mean that an estimated 170 patients would require care for approximately 14 hours or more beyond the normal 5:00pm end of the standard day. This would require more than one additional full time RN position based on 170 extended hour shifts times 14 hours equals 2,380 annual hours. However, NCSC projects only 1.5 FTE for recovery as seen on page 92. It is impossible for the 1.5 FTE RN staff to provide both daytime recovery during the normal hours as well as extended recovery for up to 23 hours.

Criterion 12
The NHSC facility plan depicts a multi-story building with a lobby, stairwells and elevators that are integral to the overall facility plan for the proposed project. However, the application does not explain the square footage amounts or the lease expense related to the common areas that include the lobby, stairwell and vestibules of the building. The facility plans also fail to identify the pre-procedure and post-procedure patient areas. No space is identified for the patients that are expected to have an extended stay of up to 23 hours. Consequently the applicant fails to demonstrate that the proposal cost, design, and means of construction represent the most reasonable alternative and that the construction project will not unduly increase the costs of providing health services. Consequently the NHSC application is nonconforming to Criterion 12.

Criterion 18a
As discussed in the Criteria 3, 4, and 5 comments, the utilization projections are not credible and the financial projections are unreliable. Therefore the information provided by NHSC is not reasonable and credible and does not adequately demonstrate that any enhanced competition includes a positive impact on the cost-effectiveness.

10A NCAC .2103(b) and (f) Performance Standards
The NHSC application does not adequately demonstrate that its projected utilization is based on reasonable and adequately supported assumptions. The discussion regarding projected utilization found in Criterion 3 are incorporated herein by reference. Therefore, the application is not conforming to these Rules.

Wilmington SurgCare Comments Specifically Regarding Wilmington ASC (WASC) Project ID # O-11441-17

Criterion 1

The WASC application is nonconforming to Criterion1 and Policy GEN-3. The applicant does not adequately demonstrate how its projected volumes incorporate the concept of maximum value for resources expended. The applicant does not adequately demonstrate the need to develop an ASC with one OR, three multispecialty GI endoscopy procedure rooms and three other procedure rooms. Therefore, the applicant fails to show how the proposed project will maximize healthcare value for resources expended in meeting the need identified in the 2017 SMFP. The discussion regarding analysis of need, including projected utilization, found in Criterion 3 is incorporated herein by reference. Therefore, the application is not consistent with Policy GEN-3.

Criterion 3

The WASC application is non-conforming to Criterion 3 because the overall utilization projections are unreliable. Unlike every other multispecialty ambulatory surgical facility in North Carolina, the proposed WASC facility includes one OR, three multispecialty GI endoscopy procedure rooms and three other procedure rooms. This mismatch of proposed capacity is entirely inconsistent with the SCA facilities in North Carolinas as seen in Attachment 2.

The utilization projections for the proposed project are based on unsupported assumptions regarding the assignment of percentages to allocate overstated volumes to the proposed OR, GI Endo and procedure rooms. WASC bases its projections by assigning arbitrary percentages to its expected surgical and nonsurgical cases to arrive at the future number of OR cases, GI endoscopy cases and procedure room "cases."

The nonsurgical procedures that are performed in ASC and hospital procedure rooms are excluded from the State Medical Facilities Plan and the OR methodology. Many of these simple procedures can be performed in unlicensed procedure rooms in a physician's office. These types of procedures do not meet the definitions of either a surgical case or a GI endoscopy case. The applicant includes a huge volume of unsupported procedure room "cases" that exceed the volumes performed at other individual SCA facilities in North Carolina. The overall utilization and financial performance of the proposed project are not based on reasonable assumptions.

The following table shows the historical data for the combined SCA facilities for the reporting period 10/1/2015 through 9/30/2016 based on the SCA licensure renewal applications as seen in Attachment 2.

SCA Combined Seven Facilities	# Rooms	% Total	#	% Total	
OR Combined of SCA NC Facilities	47	75.81%	50,212	79.46%	
GI Endoscopy Combined	5	8.06%	1,282	2.03%	
Procedure Rooms / Non-surgical	10	16.13%	11,696	18.51%	
Totals OR, GI Endo and Proc Rooms	62	100.00%	63,190	100.00%	

As seen in the table above, the majority of ASC utilization at the existing SCA facilities is performed in the ORs. GI Endoscopy cases plus procedure room volumes comprise an average of 20.54% (2.03% + 18.51%) of total utilization.

In contrast, the WASC projected utilization shows the opposite pattern of utilization as compared to the existing SCA facilities.

WASC Project	#	% of Total	#	% of Total
OR	1	14.29%	1,337	9.78%
GI Rooms	3	42.86%	4,915	35.96%
Procedure Rooms	3	42.86%	7,416	54.26%
Total	7	100.00%	13,668	100.00%

The WASC application unreasonably predicts overstated utilization of procedure rooms that has never previously occurred at larger SCA ambulatory surgery centers located in service areas with larger populations. There are no SCA facilities in North Carolina that have reported over 2,800 annual nonsurgical procedures per individual facility in its procedure rooms for the most recent year. This is remarkable because the existing SCA facilities as well as other facilities have the option to add procedure rooms to increase their overall facility capacity. Clearly the WASC projected utilization for the procedure rooms is grossly overstated and unreliable.

Criterion 4

The WASC application is non-conforming to Criterion 4 because the utilization projections are not credible and the financial projections are unreliable. An application is not an effective alternative if it fails to demonstrate financial feasibility.

Criterion 5

The WASC application is non-conforming to Criterion 5 because the utilization projections are not credible which then causes the financial projections to be unreliable. Staffing projections and salaries for the project do not assign sufficient registered nurse FTEs to the one operating room service component and the related recovery and "extended stay". The financial worksheets show that only 9.78% of the staffing resources are assigned to the one OR; this one room is used for the highest acuity and longest duration cases, that include orthopedic and neurosurgery patients.

In addition, the WASC application provides inconsistent information regarding operating room payor mix percentages on pages 157 and 158 as compared to the Operating Room Forms D and E in the financial proforma. The discussion regarding payor mix, found in Criterion 13c, is incorporated herein by reference.

Criterion 7

The WASC application is non-conforming to Criterion 7 because the allocation of staffing and salary expense to the one OR does not take into consideration that the OR cases will be far more complex and time consuming as compared to the procedure room "cases". The OR cases and recovery times need to have far greater RN staffing because the applicant states the cases performed in the OR will include total joint and

neurosurgery cases. WASC only discusses the need for extended stay recovery for patients who have surgery in the operating room.

FTEs and Salary Info

Position Title	2017 2017 Salary per CL	2020 FTE	2021 FTE	2022 FTE	OR Expense 2020 Expense	OR Expense 2021 Expense	OR Expense 2022 Expense	Procedure Room Expense 2019 Expense	Procedure Room Expense 2020 Expense	Procedure Room Expense 2021 Expense
CLINICAL:										
RN	$ 70,000	16.70	23.85	23.85	$ 105,973	$ 182,711	$ 187,918	$ 1,165,471	$ 1,685,404	$ 1,733,438
LPN	$ 40,000	4.08	5.83	5.83	$ 14,803	$ 25,522	$ 26,249	$ 162,795	$ 235,421	$ 242,131
Surgical Technicians	$ 50,000	5.94	8.48	8.48	$ 26,914	$ 46,403	$ 47,725	$ 295,993	$ 428,039	$ 440,238
Radiology Technicians	$ 63,000	1.11	1.59	1.59	$ 6,358	$ 10,963	$ 11,275	$ 69,928	$ 101,124	$ 104,006
OR addendant	$ 31,200	1.00	2.00	2.00	$ 2,829	$ 6,277	$ 6,456	$ 31,115	$ 57,901	$ 59,552
Total Clinical	**$ 61,053**	**28.83**	**41.75**	**41.75**	**$ 156,877**	**$ 271,875**	**$ 279,624**	**$ 1,725,303**	**$ 2,507,890**	**$ 2,579,365**
ADMINISTRATION:										
Administrator	$ 110,000	1.00	1.00	1.00	$ 9,975	$ 12,038	$ 12,382	$ 109,701	$ 111,048	$ 114,213
Director of Nursing	$ 95,000	1.00	1.00	1.00	$ 8,615	$ 10,397	$ 10,693	$ 94,742	$ 95,905	$ 98,638
Business Office Lead	$ 52,000	1.00	1.00	1.00	$ 4,715	$ 5,691	$ 5,853	$ 51,859	$ 52,495	$ 53,991
					$ -	$ -	$ -	$ -	$ -	$ -
Total Administration	**$ 85,667**	**3.00**	**3.00**	**3.00**	**$ 23,305**	**$ 28,126**	**$ 28,928**	**$ 256,301**	**$ 259,448**	**$ 266,842**
SUPPORT:										
Business Office Clerk	$ 35,000	9.10	13.00	13.00	$ 28,882	$ 49,795	$ 51,215	$ 317,634	$ 459,334	$ 472,425
Physician Office Liaison	$ 47,000	0.00	0.00	0.00	$ -	$ -	$ -	$ -	$ -	$ -
Purchasing Coord	$ 55,000	2.00	2.00	2.00	$ 9,975	$ 12,038	$ 12,382	$ 109,701	$ 111,048	$ 114,213
Sterile Processing Clerk	$ 45,000	1.48	2.12	2.12	$ 6,056	$ 10,441	$ 10,738	$ 66,598	$ 96,309	$ 99,054
Sterile Processing Coordinator	$ 47,000	1.06	1.06	1.06	$ 4,518	$ 5,452	$ 5,608	$ 49,684	$ 50,295	$ 51,728
Medical records	$ 35,000	1.00	1.00	1.00	$ 3,174	$ 3,830	$ 3,940	$ 34,905	$ 35,333	$ 36,340
Maintenance	$ 33,000	1.00	1.00	1.00	$ 2,992	$ 3,612	$ 3,714	$ 32,910	$ 33,314	$ 34,264
					$ -	$ -	$ -	$ -	$ -	$ -
					$ -	$ -	$ -	$ -	$ -	$ -
Total Support	**$ 39,952**	**15.64**	**20.18**	**20.18**	**$ 55,596**	**$ 85,169**	**$ 87,596**	**$ 611,432**	**$ 785,633**	**$ 808,024**
Grand Total	**$ 60,652**	**47.47**	**64.93**	**64.93**	**$ 235,778**	**$ 385,170**	**$ 396,148**	**$ 2,593,036**	**$ 3,552,972**	**$ 3,654,231**

The following page shows the analysis of the 2021(Year 2) FTE and salary expense for the WASC application which documents that **only 9.78%** of the FTEs and salary expenses are budgeted for the one OR component; the vast majority, **90.22%**, of FTEs and salary, are assigned to the six procedure rooms This staffing allocation is unreasonable. However, the application fails to provide assumptions or projections for the additional recovery services that will require nursing staff. The financial proforma assumptions shown below document that the minimal allocations of FTEs and salary expenses for the one operating room and the vast majority of FTEs and salary assigned to the procedure rooms.

Analysis of WASC FTEs and Salaries

	2021 YR 2 Expense WASC Financial Assumptions	Year 2 Salary Staffing Table	FTEs Assigned to One OR Service Component	FTEs Assigned to Six Procedure Rooms Service Component	Total WASC FTES	% of Total FTEs Assigned to OR	% of FTEs Assigned to Six Procedure Rooms
RN	$182,711	$78,328	2.33	21.52	23.85	9.78%	90.22%
LPN	$25,552	$44,795	0.57	5.26	5.83	9.78%	90.22%
Surgical Technician	$46,403	$55,948	0.83	7.65	8.48	9.78%	90.22%
Radiology Technician	$10,963	$70,495	0.16	1.43	1.59	9.78%	90.22%
OR Attendant	$6,277	$32,089	0.20	1.80	2	9.78%	90.22%
Adminstrator	$12,038	$123,086	0.10	0.90	1	9.78%	90.22%
Director of Nursing	$10,397	$106,302	0.10	0.90	1	9.78%	90.22%
Buisness Office Lead	$5,691	$58,186	0.10	0.90	1	9.78%	90.22%
Sterile Processing Coordinator	$5,452	$52,591	0.10	0.96	1.06	9.78%	90.22%
Medical Records	$3,830	$39,164	0.10	0.90	1	9.78%	90.22%
Sterile Processing Clerk	$10,441	$43,858	0.24	Combined Below	Combined Below	Combined Below	Combined Below
Business Office Clerk	$49,795	$43,858	1.14				
Physician Office Lianson	$0	$43,858	0.00				
Purchasing Coord	$12,038	$43,858	0.27				
Maintenance	$3,612	$43,858	0.08				
All "non-health professionals" and technical			1.73	16.39	18.12	9.55%	90.45%
Totals			6.31	58.62	64.93	9.72%	90.28%

The following narrative describes the proposed WASC project and hours of operation:

> The proposed ambulatory surgical facility's normal hours of operation will be Monday through Friday 6:30 AM through 5 PM. The first surgery cases of each day will begin at 7:00 am. The last case each day will typically end at 5:00 PM, though cases may go longer than 5:00 PM. Surgeons can also make arrangements for a later start time as needed.
>
> Surgical recovery for non-extended stay patients can occur until 7:00 PM, at which time the extended recovery nurse shift will begin. If there are no extended stay patients, staff will close the facility after the last patients has been recovered and discharged. The proposed WASC will have adequate staffing coverage to cover all shifts, including day shifts up to 7:00 PM and extended overnight stay. Because the applicant expects a number of patients to be overnight stays, it conservatively included enough staffing coverage in its pro formas to cover extended stay at least 2 days a week. Please see Section VII for the detailed staffing plan.

WASC assigns inadequate FTEs and salaries for the proposed OR service component. The 2.33 RN FTE level of staffing is not sufficient to provide adequate staffing for the proposed OR and Recovery as well as the "Extended Stay" patients. The WASC application projects that the OR will be utilized to serve neurosurgery and orthopedic cases which have the longest recovery. However, the 2.33 RN FTE staffing (2.33 x 2080 annual hours) equals 4,846.4 annual paid hours. This 2.33 RN FTE staffing cannot staff the OR for 10 hours per day plus the Pre-Post Recovery for the minimum 10 per day for 260 days per year because that requires 5,200 annual hours (20 hrs / day X 260 days). The 2.33 FTE RN staffing is certainly inadequate to provide overnight coverage (7:00pm to 7:00am) even one night per week because that would require an additional RN staff position of 0.30 FTE.

The WASC application fails to provide any assumptions and projections for the numbers of patients that are expected to have extended overnight stays. The staffing tables and the financial assumptions do not show any RN staff or other clinical staff specifically allocated to provide care for these stays.

Based on the WASC FTE and salary assumptions from the financial proforma, the staffing for the proposed project is not based on reasonable assumptions. The application did not budget sufficient funds and FTEs to support the proposed one operating room. Therefore, the applicant does not adequately demonstrate the availability of sufficient healthcare personnel to provide the proposed services; thus the application is non-conforming to Criterion 7. The error in WASC staffing allocation related to Criteria 7 also causes the application to be non-conforming to Criterion 5.

Criterion 13c

The WASC application provides inconsistent information regarding payor mix percentages and numbers of OR cases for the Operating Room on pages 157 and 158 as compared to the Operating Room Forms D and E in the financial proforma. The projected percentages and numbers of cases to be performed in the ORs are unreliable.

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Table VI. 5 – Projected Payer Mix for Operating Rooms and Total Facility, Year Two of Operations, 2021

Payer	Total Operating Room	Total Facility
	a	b
Self-Pay	2%	2%
Medicare/Medicare Managed Care	49%	49%
Medicaid	4%	4%
Commercial Insurance	43%	43%
Managed Care	0%	0%
Other (Military, Workers Comp)	3%	3%
Total	**100%**	**100%**

Notes:

a: Corresponding Utilization for Each Payer Category / Total Utilization from Table VI.4

b: Corresponding Utilization for Each Payer Category / Total Utilization from Table VI.4

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Table VI. 4 – Projected Utilization for Operating Rooms and Total Facility; Year Two of Operations

Payer	Total Operating Room	Total Facility
	a	b
Self-Pay	24	243
Medicare/Medicare Managed Care	649	6,634
Medicaid	50	510
Commercial Insurance/ Managed Care	570	5,827
Managed Care	0	0
Other (Military, Workers Comp)	44	455
Total	**1,337**	**13,668**

Form D

Wilmington ASC, LLC
Service Component - OR

First Full Year (From 1/01/2020 to 12/31/2020)

	% of Total	# of Patient Days, Cases or Procedures	times	Projected Average Charge	equals	Gross Revenue
Self Pay	6.01%	48	$	5,373	$	256,534
Medicare/Medicare Managed Care	27.97%	222	$	8,312		1,848,409
Medicaid	5.38%	43	$	5,718		244,492
Commercial Insurance	55.38%	440	$	10,516		4,630,537
Other (Military, Workers Comp)	5.27%	42	$	10,298		431,183
Total	**100%**	795			$	7,411,156

Second Full Year (From 1/01/2021 to 12/31/2021)

	% of Total	# of Patient Days, Cases or Procedures	times	Projected Average Charge	equals	Gross Revenue
Self Pay	5.94%	79	$	5,453	$	433,261
Medicare/Medicare Managed Care	28.31%	378	$	8,437		3,192,914
Medicaid	5.67%	76	$	5,804		439,975
Commercial Insurance	54.86%	733	$	10,673		7,828,081
Other (Military, Workers Comp)	5.21%	70	$	10,452		728,182
Total	**100%**	1,337			$	12,622,412

Third Full Year (From 1/01/2022 to 12/31/2022)

	% of Total	# of Patient Days, Cases or Procedures	times	Projected Average Charge	equals	Gross Revenue
Self Pay	5.94%	81	$	5,535	$	446,427
Medicare/Medicare Managed Care	28.31%	384	$	8,563		3,289,940
Medicaid	5.67%	77	$	5,891		453,345
Commercial Insurance	54.86%	745	$	10,834		8,065,961
Other (Military, Workers Comp)	5.21%	71	$	10,609		750,310
Total	**100%**	1,357			$	13,005,983

Form E

Wilmington ASC, LLC
Service Component - OR

First Full Year (From 1/01/2020 to 12/31/2020)

	% of Total	# of Patient Days, Cases or Procedures	times	Projected Average Reimbursement Rate	equals	Net Revenue
Self Pay	6.01%	48	$	1,982	$	94,635
Medicare/Medicare Managed Care	27.97%	222	$	2,568		571,124
Medicaid	5.38%	43	$	841		35,979
Commercial Insurance	55.38%	440	$	5,357		2,358,711
Other (Military, Workers Comp)	5.27%	42	$	3,108		130,154
Total	**100%**	795			$	3,190,603

Second Full Year (From 1/01/2021 to 12/31/2021)

	% of Total	# of Patient Days, Cases or Procedures	times	Projected Average Reimbursement Rate	equals	Net Revenue
Self Pay	5.94%	79	$	1,982	$	157,468
Medicare/Medicare Managed Care	28.31%	378	$	2,568		971,971
Medicaid	5.67%	76	$	841		63,789
Commercial Insurance	54.86%	733	$	5,357		3,928,553
Other (Military, Workers Comp)	5.21%	70	$	3,108		216,556
Total	**100%**	1,337			$	5,338,336

Third Full Year (From 1/01/2022 to 12/31/2022)

	% of Total	# of Patient Days, Cases or Procedures	times	Projected Average Reimbursement Rate	equals	Net Revenue
Self Pay	5.94%	81	$	1,982	$	159,855
Medicare/Medicare Managed Care	28.31%	384	$	2,568		986,706
Medicaid	5.67%	77	$	841		64,756
Commercial Insurance	54.86%	745	$	5,357		3,988,113
Other (Military, Workers Comp)	5.21%	71	$	3,108		219,839
Total	**100%**	1,357			$	5,419,269

The information provided by the WASC regarding the payor mix is not reasonable and does not adequately demonstrate that the proposed project will provide adequate access to the medically underserved population. Therefore the WASC application is non-conforming to Criterion 13c.

Criterion 18a

The WASC application discusses the impact of the project on cost-effectiveness, quality and access. However, the information provided by the applicant is not reasonable and does not adequately demonstrate that any enhanced competition in the service area includes a positive impact on cost-effectiveness, quality and access to the proposed services. This determination is based on the information in the application and the following analysis:

- WASC does not adequately demonstrate the need for the proposed project and that it is a cost-effective alternative. The discussions regarding analysis of need and alternatives found in Criteria 3 and 4, respectively, are incorporated herein by reference.
- The applicant does not adequately demonstrate the financial feasibility of the project because the staffing and salary projections are flawed. Please see the previous comments regarding financial projections in Criterion 5 and the inadequate staffing in Criterion 7.
- WASC makes inconsistent projections regarding payor mix and fails to adequately demonstrate access to the medically underserved population. Please see the comments regarding payor mix in Criteria 13c.

Therefore the information provided by WASC does not adequately demonstrate that any enhanced competition related to its proposal will include a positive impact on the cost-effectiveness, quality and access.

10A NCAC .2103(b) and (f) Performance Standards

The WASC application does not adequately demonstrate that its projected utilization is based on reasonable and adequately supported assumptions. The discussion regarding projected utilization found in Criterion 3 is incorporated herein by reference. Therefore, the application is not conforming to these Rules.

2016 Biennial Data Report

WILMINGTON URBAN AREA
METROPOLITAN PLANNING ORGANIZATION

TABLE OF CONTENTS

INTRODUCTION

In 2012, the Federal Highway Administration (FHWA) designated the Wilmington Urban Area Metropolitan Planning Organization (WMPO) as a Transportation Management Area (TMA). As a TMA, the WMPO is required to prepare and adopt a Congestion Management Process (CMP) to evaluate and manage congestion in a regionally-agreed upon manner. The CMP, adopted in December of 2013, establish performance measures for evaluating and monitoring system performance using data collected from the WMPO and partner agencies.

The WMPO publishes the Biennial Data Report to demonstrate how the WMPO's regional network is performing according to the performance measures established in the CMP. This being the first Biennial Report prepared by the WMPO there could be need for a reassessment of how the Congestion Management Process defines the criteria and evaluation of the roadway segments. The report provides snapshots for each of the 29 roadway segments within the system that analyze the datasets and congestion mitigation techniques. The analysis will demonstrates the effectiveness of the current strategies in place and where there are opportunities for improvement in the future.

COLLECTING DATA AND EVALUATING CMP SEGMENTS

The CMP outlines the criteria for evaluating and ranking each corridor segment. Currently, congestion is one of the highest concerns on the region's roadway network within the Metropolitan Planning Area. This indicates a need for strategies to be prioritized in order to focus efforts on projects that will be most beneficial to the region.

The criteria and data used to evaluate each segment for this biennial report was collected between 2014 and 2016 and includes:

1.) Travel Time Performance Measures

- Average Travel Time AM/PM: Data was collected by WMPO and City of Wilmington Traffic Engineering staffs over the course of two years. The data was collected through a traffic monitoring method called floating car studies which used GPS devices to collect data on speed and travel time.
- Average Delay AM/PM: Data was collected by WMPO and City of Wilmington Traffic Engineering staffs over the course of two years. The data was collected through a traffic monitoring method called floating car studies which used GPS devices to collect data on location and duration of delays.
- Hotspot identification: Data was collected by WMPO and City of Wilmington Traffic Engineering staffs over the course of two years. The data was collected through a traffic monitoring method called floating car studies which used GPS devices to identify specific points of congestion along the segments.

2.) Safety Performance Measures

- Rear End Collisions: This data was collected by the NCDOT Traffic Safety Unit through their TEAAS Program which aggregates and geo-locates traffic incidents from law enforcement officials throughout the state of North Carolina.

- Bicycle Crashes: This data was collected by the NCDOT Traffic Safety Unit through their TEAAS Program which aggregates and geo-locates traffic incidents from law enforcement officials throughout the state of North Carolina. The NCDOT Bicycle and Pedestrian Division has created a sub-set of the TEAAS data to further analyze bicycle crashes. Note that, due to the additional analysis needed to create this data sub-set, there is a lag time in the data availability and the most current data available for this report represents crashes that occurred in 2012 and 2013.

- Pedestrian Crashes: This data was collected by the NCDOT Traffic Safety Unit through their TEAAS Program which aggregates and geo-locates traffic incidents from law enforcement officials throughout the state of North Carolina. The NCDOT Bicycle and Pedestrian Division has created a sub-set of the TEAAS data to further analyze pedestrian crashes. Note that, due to the additional analysis needed to create this data sub-set, there is a lag time in the data availability and the most current data available for this report represents crashes that occurred in 2012 and 2013.

3.) Volume Performance Measures

- Average Vehicle Count: This data was collected by the WMPO through pneumatic tube counters at various locations along CMP segments. The data represents raw traffic counts collected at point locations averaged along each segment.
- Truck percentage: This data was collected along CMP freight corridors by the WMPO through the use of Hi-Star portable traffic analyzers by utilizing vehicle magnetic imaging technology. It represents truck volume as a percentage of the overall vehicular volume over a 24 hour period at a specific location along the corridor.
- Bicycle Counts AM/PM:This data was collected along CMP commercial and destination corridors by the WMPO through manual counts and review of VHS recordings of select intersections for one day during peak hours.
- Pedestrian Counts AM/PM: This data was collected along CMP commercial and destination corridors by the WMPO through manual counts and review of VHS recordings of select intersections for one day during peak hours.

4.) Transit Performance Measure

- Transit Boarding - Cape Fear Public Transportation Authority provided fixed route passenger totals for FY 2015. This data was aggregated for each CMP roadway segment.

SEGMENT SCORING

The WMPO staff developed a systematic process to equally disperse performance measure points to represent the collected data in order to compare data performance across segments. This was done by allocating the most points to the roadway segment that ended up with the highest combined data. For example a roadway segment with 200 rear end collisions will be given more points than a roadway segment with 100 rear end collisions and a roadway segment with an average vehicle volume of 20,000 will be given more points than a roadway segment with an average vehicle volume of 10,000.

Each data-set was broken up by performance measure to give a clear picture of where to focus roadway segment strategies and improvements in the future.

The number of points available for each performance measure is listed in the table below:

Performance Measures	Points Possible
Travel Time	2 points per minute of delay
Safety	30
Volume	50
Transit Performance	10

SEGMENT CONGESTION MANAGEMENT RESULTS

Using the collected data and Congestion Management Process's scoring criteria, this is how each roadway segment ranked in terms of congestion management needs:

Most Congested Corridors in the WMPO Region		
Segment	**Roadway**	**Total Score**
1	College Road - Gordon Rd to Wilshire Blvd	65
2	Market Street - 3rd St to College Rd	61
3	Carolina Beach Road - Alabama Ave to College Rd	61
4	College Road - Wilshire Blvd - Pinecliff Dr	52
5	Oleander Drive - 5th Ave to Treadwell St	48
6	Oleander Drive/Military Cutoff Road - Treadwell St to Gordon Rd	46
7	New Center Drive - Market St to Racine Dr	45
8	Kerr Avenue - MLK Jr. Pkwy to Randall Pkwy	43
9	Gordon Road - Kerr Ave to Military Cutoff Rd	41
10	Randall Parkway - Independence Blvd to Racine Dr	41
11	Market Street - College Road to Torchwood Dr/Bayshore Dr	40
12	Eastwood Road/US 76/Causeway Dr - Military Cutoff Rd to Lumina Ave	39
13	US 421/Carolina Beach Road - Halyburton Pkwy to Atlanta Ave	38
14	17th Street - Savannah Ct to Shipyard Blvd	36
15	US 17 - Washington Acres Rd to Sloop Point Loop Rd	35
16	Shipyard Boulevard - River Rd to College Rd	33
17	Racine Drive - Randall Pkwy to Eastwood Rd	29
18	US117/College Road - Holly Shelter Rd to Gordon Rd	28
19	US 17/74/76 - River Road to 5th Ave	28
20	College Road/Carolina Beach Road - Pinecliff Dr to Halyburton Pkwy	27
21	US 17/US 421/NC 133 - USS North Carolina Rd to 3rd St	26
22	US 17/Market Street - Marsh Oaks Dr/Mendenhall Dr to Sidbury Rd	24
23	Ocean Highway - Lanvalle Rd -to US 74/76 Andrew Jackson Hwy	24
24	Village Road/NC 133 - Navassa Rd to Jackey's Creek Ln	23
25	US 74/76 - Maco Rd to NC 133	23
26	MLK Jr. Parkway/Eastwood Road - College Rd to Racine Dr	22
27	Front Street - Lake Shore Dr to Cape Fear Memorial Bridge	21
28	3rd Street - Kentucky Ave to Wooster St	13
29	US421/Lake Park Blvd - Atlanta Ave to Buzzards Bay	11

To get a more thorough understanding of the individual roadway segments and to get a detailed analysis of the components that factored into the congestion ranking results please refer to the snapshots following this section.

SEGMENT SNAPSHOTS

Segment snapshots provide the WMPO and member jurisdictions a quick understanding of a specific corridor by concisely illustrating the corridor's performance and showing the data that has been collected over a two-year period.

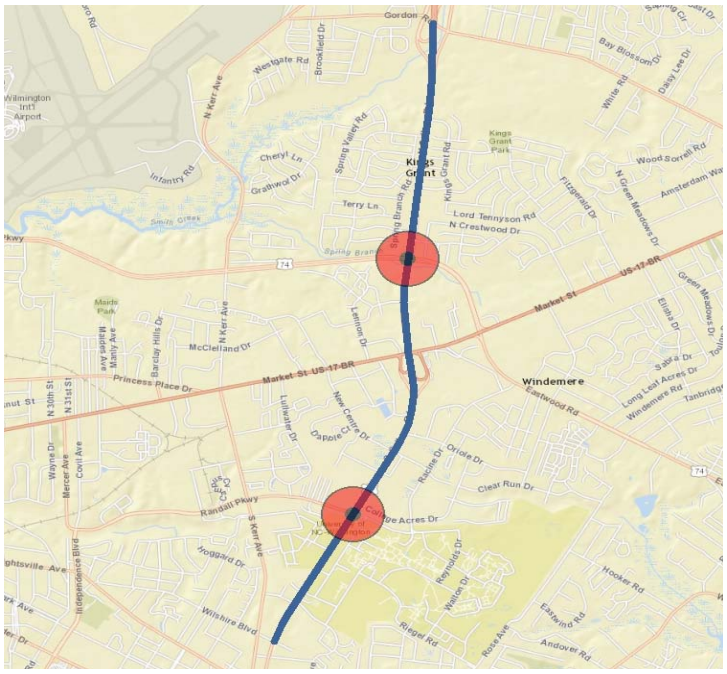
The top of the snapshots include the name of the segment analyzed and identify the intersecting road that begins and ends the segment. The following section includes the segment's rank and a map showing the entire segment with each hotspot circled in red. Adjacent to the map, there is additional information about the segment including; its functional type, the mileage along the corridor, the hotspot intersections, the peak hours of the segment, and alternate routes that could potentially relieve demand and congestion along that corridor.

As explained in the segment scoring, each segment's overall score correlates with the performance measure data and is ranked accordingly. The corridors with the highest ranking are in need of the most attention per the congestion management process.

The WMPO Congestion Mitigation Techniques represent the strategies previously listed in the adopted Congestion Management Process. These Congestion Mitigation Techniques need to be applied to manage congestion along the segment. Below the techniques are the Current Implementation Projects and Plans; these are existing funded projects or existing plans that are already set in place to improve or implement one or many of the needed strategies in the future.

Segment 1 College Road

Gordon Road to Wilshire Boulevard



CONGESTION RANK: 1 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commercial Corridor Commuting Corridor
Destination Corridor Tourist Route

MILEAGE ALONG CORRIDOR: 4.3 Miles

NUMBER OF HOTSPOTS: 2
1. Martin Luther King Jr. Parkway
2. Randall Parkway

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE:
Kerr Avenue and Independence Boulevard

SEGMENT OVERALL SCORE: 65

Data		
Average Travel Time AM/PM	6:44 / 7:56	
Average Delay AM/PM	1:52 / 3:09	
Rear End Collisions	462	
Bicycle Crashes	6	10
Pedestrian Crashes	4	
Average Vehicle Volume	52,822	
Truck Percentage	N/A	
Bicycle Counts AM/PM	62 / 14	
Pedestrian Counts AM/PM	63 / 36	
Transit Boarding	97,819	

Performance Measure Points	
Travel Time	10
Safety	14
Volume	32
Transit Performance	9

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Alternative Roadways: Improve usage of non-CMP roadways to remove demand on CMP network

SHIFT MODE OF TRIP STRATEGIES:
- Expand pedestrian and bicycle network
- Improve multimodal access at intersections
- Implement Bicycle Sharing Program

IMPROVE OPERATIONS STRATEGIES:
- Access Management: Limits access to land uses through limiting turning movements and conflict points

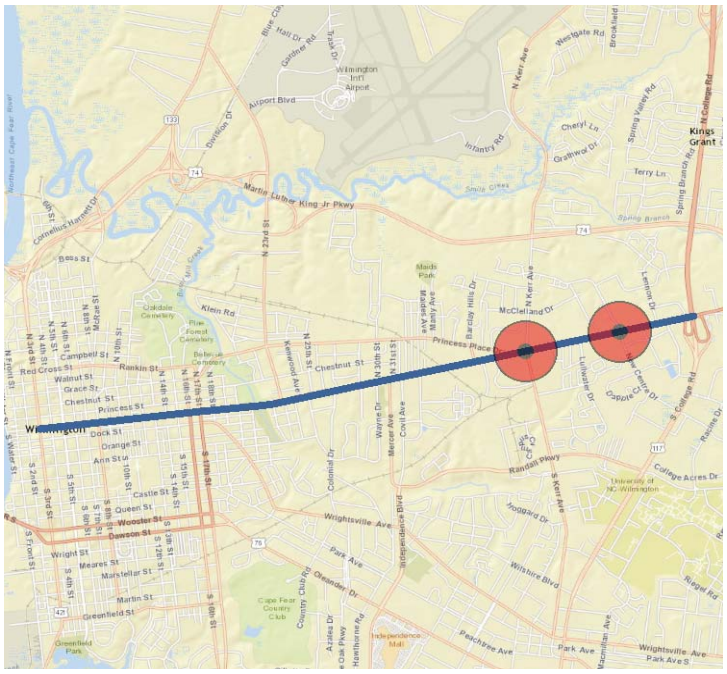
INCREASE CAPACITY STRATEGIES:
- Convert intersections to interchange: Improves capacity with at-grade or grade separated alternative

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- U-4434 - Independence Blvd Ext: Multi-lanes on new location
- U-3338 - Kerr Ave: Widen to multi-lanes
- COW Transportation Bond 2014 - Kerr Area Improvements: Multi-use paths and crosswalks at Wilshire Blvd & College Rd and Wilshire Blvd & Kerr Ave
- UNCW Bike Share Program
- U-5702 - College Rd: Access management and travel time improvements
- U-5792 - MLK Jr. Pkwy and College Rd: Convert at-grade intersection to interchange

Segment 2 Market Street

3rd Street to College Road



CONGESTION RANK: 2 OF 29

CORRIDOR FUNCTIONAL TYPES:
Destination Corridor

MILEAGE ALONG CORRIDOR: 4.4 Miles

NUMBER OF HOTSPOTS: 2
1. Kerr Avenue
2. New Center Drive

PEAK HOURS: 7:00-9:00AM / 4:30-6:30PM

ALTERNATE ROUTE:
Martin Luther King Jr. Parkway

SEGMENT OVERALL SCORE: 61

Data		
Average Travel Time AM/PM	8:08 / 9:24	
Average Delay AM/PM	1:12 / 2:28	
Rear End Collisions	269	
Bicycle Crashes	8	20
Pedestrian Crashes	12	
Average Vehicle Volume	36,837	
Truck Percentage	N/A	
Bicycle Counts AM/PM	77 / 87	
Pedestrian Counts AM/PM	134 / 117	
Transit Boarding	71,702	

Performance Measure Points	
Travel Time	7
Safety	17
Volume	30
Transit Performance	7

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Land Use - Manage Growth: Encourage growth in appropriate areas
- Alternative Roadways: Improve usage of non-CMP roadways to remove demand on CMP network

SHIFT MODE OF TRIP STRATEGIES:
- Transit - Increase frequency: Increase existing public transit fixed routes
- Expand pedestrian and bicycle network
- Improve multimodal access at intersections

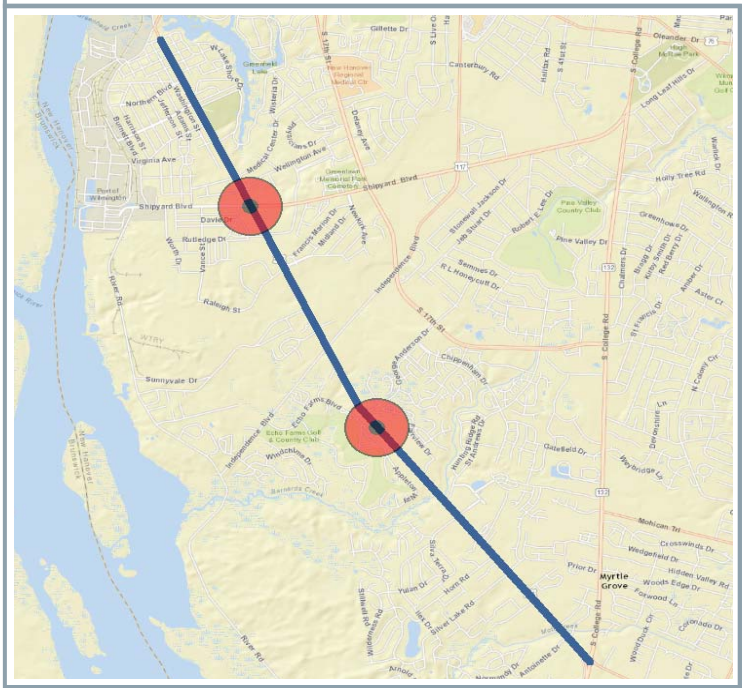
IMPROVE OPERATIONS STRATEGIES:
- Access Management: Limit access to land uses through limiting turning movements and conflict points
- Geometric Intersection Improvements: Change intersection use by changing the physical layout

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- U-5792 - MLK Jr. Pkwy and College Rd: Convert at grade intersection to interchange
- U-4902B - Colonial Dr to MLK Jr. Pkwy: Improve access management
- U-5869 - S.17th St to Covil Ave: Construct a road diet
- U-3338B - Kerr Ave - Randall Pkwy to MLK Jr. Pkwy: Widen to multi-lanes
- U-3338C - Kerr Ave at MLK Jr. Pkwy: Convert intersection to interchange

Segment 3 Carolina Beach Road

Alabama Avenue to College Road



CONGESTION RANK: 3 OF 29

CORRIDOR FUNCTIONAL TYPES:
Freight Corridor Commercial Corridor
Tourist Route

MILEAGE ALONG CORRIDOR: 5.7 Miles

NUMBER OF HOTSPOTS: 2
1. Shipyard Boulevard
2. Codington Elementary School Vicinity (AM)

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE: None

SEGMENT OVERALL SCORE: 61

Data		
Average Travel Time AM/PM	8:48 / 9:46	
Average Delay AM/PM	1:16 / 2:13	
Rear End Collisions	106	
Bicycle Crashes	6	11
Pedestrian Crashes	5	
Average Vehicle Volume	31,783	
Truck Percentage	4.35%	
Bicycle Counts AM/PM	42 / 38	
Pedestrian Counts AM/PM	71 / 56	
Transit Boarding	118,850	

Performance Measure Points	
Travel Time	6
Safety	12
Volume	33
Transit Performance	10

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Land Use - Accommodate all modes in new development
- Land Use - Construct supportive collector street network with new development

SHIFT MODE OF TRIP STRATEGIES:
- Transit - Increase frequency: Increase existing public transit fixed routes
- Expand pedestrian and bicycle network
- Improve multimodal access at intersections

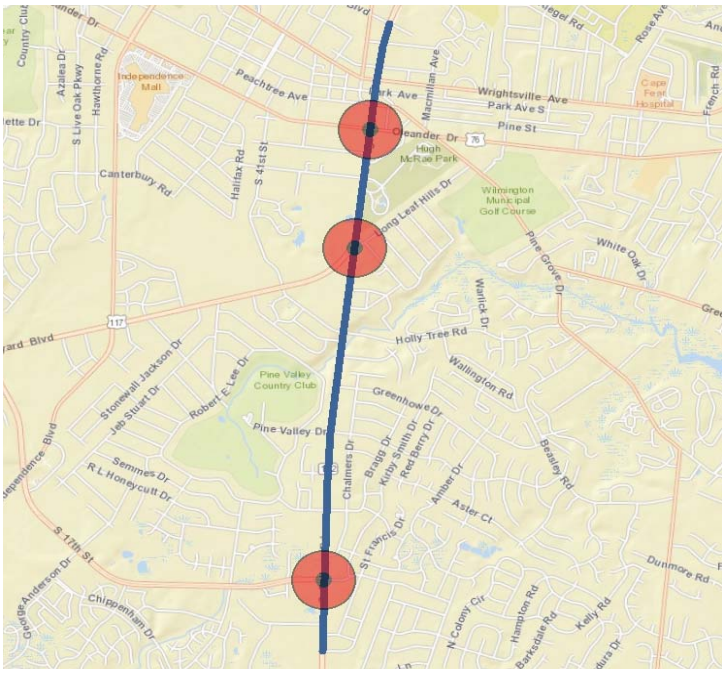
IMPROVE OPERATIONS STRATEGIES:
- Access Management: Limit access to land uses through limiting turning movements and conflict points
- Geometric Intersection Improvements: Change intersection use by changing the physical layout

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- Carolina Beach Corridor Plan: Provides strategies for making Carolina Beach Road less congested
- U-5729 - Carolina Beach Rd: Access management and travel time improvements
- COW Transportation Bond 2014 - Carolina Beach Rd Streetscape: Landscaped median, pedestrian upgrades, etc.
- Carolina Beach Rd and Shipyard Blvd Improvements: Anticipated in 2017 STIP

Segment 4 College Road

Wilshire Boulevard to Pinecliff Drive



CONGESTION RANK: 4 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commercial Corridor Tourist Route

MILEAGE ALONG CORRIDOR: 3.4 Miles

NUMBER OF HOTSPOTS: 3
1. Oleander Drive
2. Shipyard Blvd
3. 17th Street

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE:
Independence Boulevard

SEGMENT OVERALL SCORE: 52

Data		
Average Travel Time AM/PM	7:34 / 8:06	
Average Delay AM/PM	3:00 / 3:36	
Rear End Collisions	251	
Bicycle Crashes	4	7
Pedestrian Crashes	3	
Average Vehicle Volume	47,535	
Truck Percentage	N/A	
Bicycle Counts AM/PM	35 / 14	
Pedestrian Counts AM/PM	25 / 30	
Transit Boarding	29,247	

Performance Measure Points	
Travel Time	13
Safety	11
Volume	26
Transit Performance	2

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Alternative Roadways: Improve usage of non-CMP roadways to remove demand on CMP network

SHIFT MODE OF TRIP STRATEGIES:
- Expand pedestrian and bicycle network
- Improve multimodal access at intersections

IMPROVE OPERATIONS STRATEGIES:
- Access Management: Limits access to land uses through limiting turning movements and conflict points

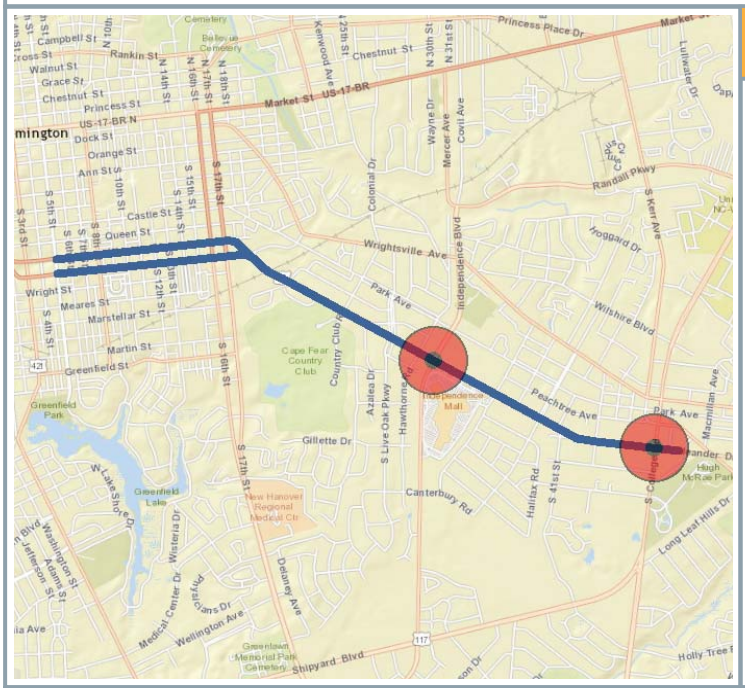
INCREASE CAPACITY STRATEGIES:
- Convert intersection to interchange: Improves capacity with at-grade or grade separated alternative

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- U-4434 - Independence Blvd Ext: Multi-lanes on new location
- COW Transportation Bond 2014 - South College Rd Trail: 1.3 mile multi-use path along South College Rd
- U-5702 - College Rd: Access management and travel time improvements
- U-5704 - College Rd: Access management and travel time improvements including interchange with US 76

Segment 5 Oleander Drive

5th Avenue to Treadwell Street



CONGESTION RANK: 5 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commercial Corridor

MILEAGE ALONG CORRIDOR: 4.7

NUMBER OF HOTSPOTS: 2
1. Independence Boulevard
2. College Road

PEAK HOURS: 7:00-9:00AM / 4:30-6:30PM

ALTERNATE ROUTE:
Wrightsville Avenue

SEGMENT OVERALL SCORE: 48

Data		
Average Travel Time AM/PM	8:33 / 8:32	
Average Delay AM/PM	2:52 / 2:52	
Rear End Collisions	10	
Bicycle Crashes	7	16
Pedestrian Crashes	9	
Average Vehicle Volume	25,021	
Truck Percentage	N/A	
Bicycle Counts AM/PM	18 / 20	
Pedestrian Counts AM/PM	28 / 37	
Transit Boarding	82,525	

Performance Measure Points	
Travel Time	11
Safety	10
Volume	19
Transit Performance	8

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- TDM - Encourage carpools & vanpools
- TDM - Encourage employer shuttles: A shuttle to provide transportation connections for employees

SHIFT MODE OF TRIP STRATEGIES:
- Transit Express Routes - Encourage new transit express routes along corridor
- Expand pedestrian network
    - Improve multi-modal access at intersections

IMPROVE OPERATIONS STRATEGIES:
- Access Management: Limit access to land uses through limiting turning movements and conflict points

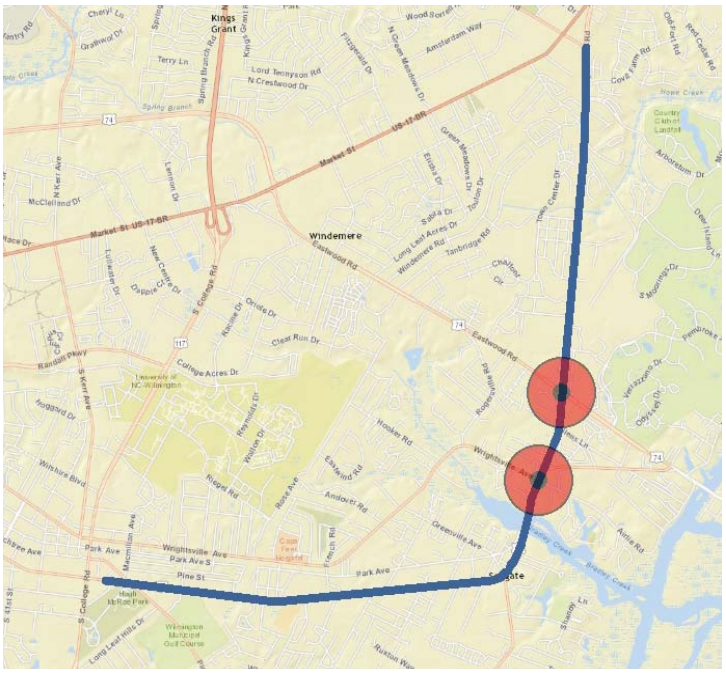
INCREASE CAPACITY STRATEGIES:
- Convert intersection to interchange: Improves capacity with at-grade or grade separated alternative

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- COW Transportation Bond 2014 - Dawson/Wooster/17th St Area Improvements: Streetscapes along Dawson & Wooster Streets with sidewalks and crosswalks at various intersections
- U-5704 - College Rd: Travel time improvements including interchange with Oleander Dr

Segment 6 Oleander Dr/Military Cutoff Rd

Treadwell Street to Gordon Road



CONGESTION RANK: 6 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commuting Corridor Commercial Corridor

MILEAGE ALONG CORRIDOR: 6.3 Miles

NUMBER OF HOTSPOTS: 2
1. Eastwood Road
2. Wrightsville Avenue/Airlie Road

PEAK HOURS: 7:00-9:00AM / 4:30-6:30PM

ALTERNATE ROUTE: None

SEGMENT OVERALL SCORE: 46

Data		
Average Travel Time AM/PM	10:55 / 13:42	
Average Delay AM/PM	2:16 / 5:03	
Rear End Collisions	6	
Bicycle Crashes	2	4
Pedestrian Crashes	2	
Average Vehicle Volume	37,937	
Truck Percentage	N/A	
Bicycle Counts AM/PM	19 / 29	
Pedestrian Counts AM/PM	16 / 24	
Transit Boarding	76,584	

Performance Measure Points	
Travel Time	14
Safety	3
Volume	22
Transit Performance	7

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Land Use - Accommodate all modes in new development

SHIFT MODE OF TRIP STRATEGIES:
- Transit Express Routes - Encourage new transit express routes along corridor
- Improve multimodal access at intersection

IMPROVE OPERATIONS STRATEGIES:
- Geometric intersection improvements: Change intersection use by changing the physical layout

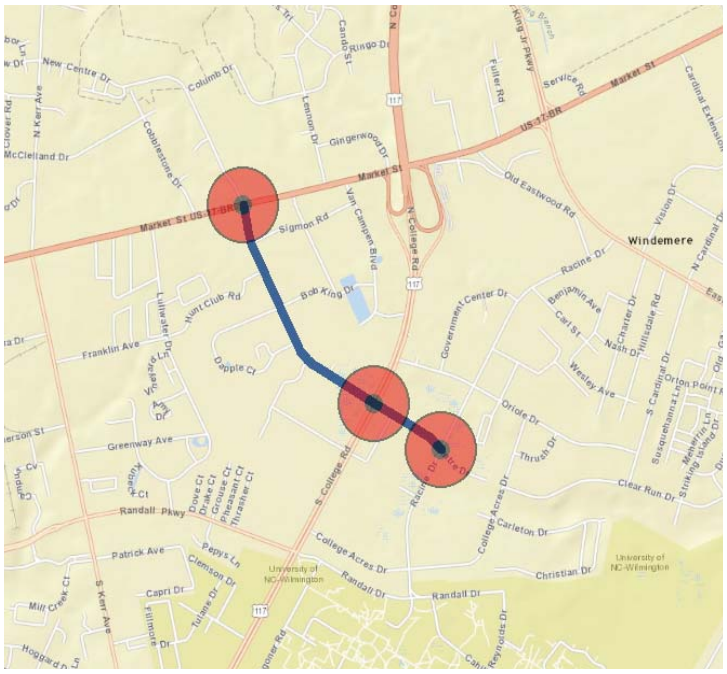
INCREASE CAPACITY STRATEGIES:
- Add turning lanes
- Convert intersection to interchange: Improves capacity with at-grade or grade separated alternative

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- Greenville Loop Rd & Oleander Rd: Safety and mobility improvements planned with future development, widening Greenville Loop Rd and adding additional turn lanes throughout the development
- Cape Fear Transportation 2040: Pilot express bus routes on major corridors
- COW Transportation Bond 2014 - Pine Grove Dr Improvements: Realignment of Pine Grove Dr/Oleander Dr intersection

Segment 7 New Center Drive

Market Street to Racine Drive



CONGESTION RANK: 7 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commercial Corridor

MILEAGE ALONG CORRIDOR: 0.9 Miles

NUMBER OF HOTSPOTS: 3

1. Market Street
2. College Road
3. Racine Drive

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE: None

SEGMENT OVERALL SCORE: 45

Data		
Average Travel Time AM/PM	4:16 / 5:13	
Average Delay AM/PM	2:31 / 3:28	
Rear End Collisions	28	
Bicycle Crashes	5	9
Pedestrian Crashes	4	
Average Vehicle Volume	16,608	
Truck Percentage	N/A	
Bicycle Counts AM/PM	13 / 13	
Pedestrian Counts AM/PM	34 / 25	
Transit Boarding	95,582	

Performance Measure Points	
Travel Time	12
Safety	7
Volume	17
Transit Performance	9

WMPO CONGESTION MITIGATION TECHNIQUES

SHIFT MODE OF TRIP STRATEGIES:

- Transit - Increase frequency: Increase existing public transit fixed routes
- Expand pedestrian and bicycle network
- Improve multimodal access at intersections
- Improve bicycle storage

IMPROVE OPERATIONS STRATEGIES:

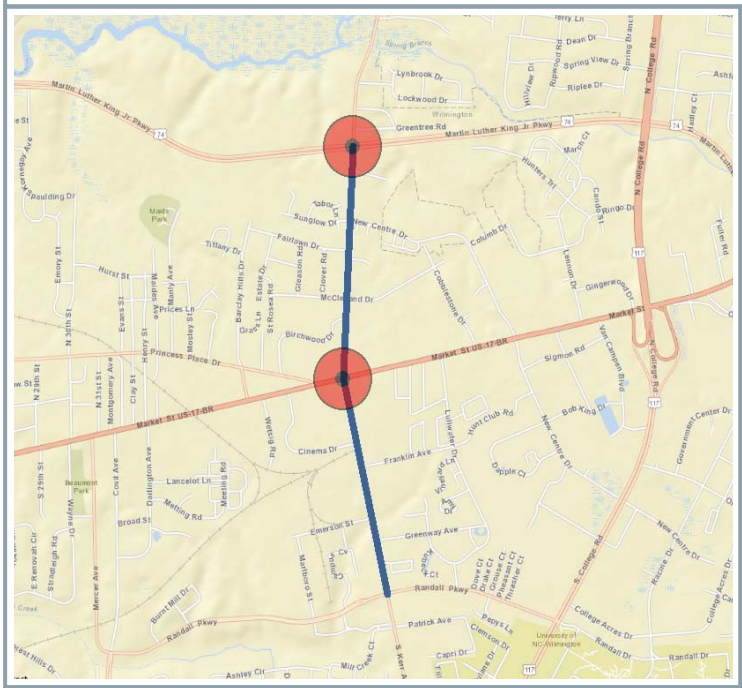
- Geometric Intersection Improvements: Change intersection use by changing the physical layout

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- H150357 - New Center Dr & Market St Intersection - Anticipated in 2017 STIP
- U-5702 - College Rd: Access management and travel time improvements

Segment 8 Kerr Avenue

Martin Luther King Jr. Parkway to Randall Parkway



CONGESTION RANK: 8 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commercial Corridor

MILEAGE ALONG CORRIDOR: 1.5 Miles

NUMBER OF HOTSPOTS: 2
1. Martin Luther King Jr. Parkway
2. Market Street

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE:
College Road

SEGMENT OVERALL SCORE: 43

Data		
Average Travel Time AM/PM	5:33 / 9:20	
Average Delay AM/PM	2:46 / 6:33	
Rear End Collisions	88	
Bicycle Crashes	2	2
Pedestrian Crashes	0	
Average Vehicle Volume	19,804	
Truck Percentage	N/A	
Bicycle Counts AM/PM	4 / 7	
Pedestrian Counts AM/PM	5 / 11	
Transit Boarding	84,216	

Performance Measure Points	
Travel Time	18
Safety	6
Volume	11
Transit Performance	8

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Alternative Roadways: Improve usage of non-CMP roadways to remove demand on CMP network

SHIFT MODE OF TRIP STRATEGIES:
- Transit - Increase frequency: Increase existing public transit fixed routes
- Land Use - TOD: Utilize mixed-use areas designed to maximize access to public transit
- Expand pedestrian and bicycle network
- Improve multimodal access at intersections
- Implement bicycle sharing program

IMPROVE OPERATIONS STRATEGIES:
- Geometric Intersection Improvements: Change intersection use by changing the physical layout

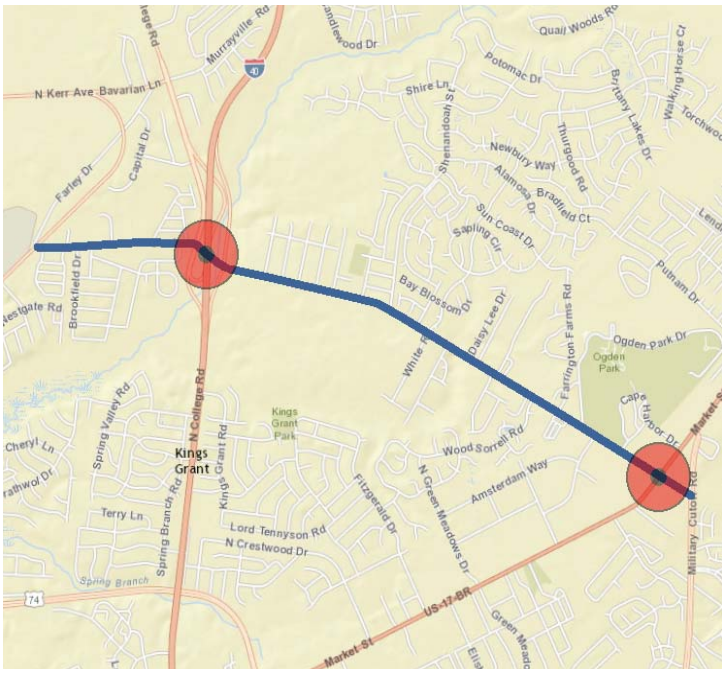
INCREASE CAPACITY STRATEGIES:
- Convert intersections to interchange: Improves capacity with at-grade or grade separated alternative

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- U-5702 - College Rd: Access management and travel time improvements
- U-3338B - Kerr Ave - Randall Pkwy to MLK Jr. Pkwy: Widen to multi-lanes
- U-3338C - Kerr Ave at MLK Jr. Pkwy: Intersection to interchange

Segment 9 Gordon Road

Kerr Avenue to Military Cutoff Road



CONGESTION RANK: 9 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commuting Corridor

MILEAGE ALONG CORRIDOR: 3.5 Miles

NUMBER OF HOTSPOTS: 2
1. Market Street
2. North College Road

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE: None

SEGMENT OVERALL SCORE: 41

Data		
Average Travel Time AM/PM	8:23 / 10:35	
Average Delay AM/PM	3:28 / 5:46	
Rear End Collisions	115	
Bicycle Crashes	0	0
Pedestrian Crashes	0	
Average Vehicle Volume	15,952	
Truck Percentage	N/A	
Bicycle Counts AM/PM	11 / 5	
Pedestrian Counts AM/PM	10 / 7	
Transit Boarding	63,757	

Performance Measure Points	
Travel Time	18
Safety	6
Volume	11
Transit Performance	6

WMPO CONGESTION MITIGATION TECHNIQUES

SHIFT MODE OF TRIP STRATEGIES:
- Transit - Increase frequency: Increase existing public transit fixed routes
- Land Use - TOD: Utilize mixed-use areas designed to maximize access to public transit
- Expand pedestrian and bicycle network
- Improve multimodal access at intersections

IMPROVE OPERATIONS STRATEGIES:
- Access Management: Limit access to land uses through limiting turning movements and conflict points

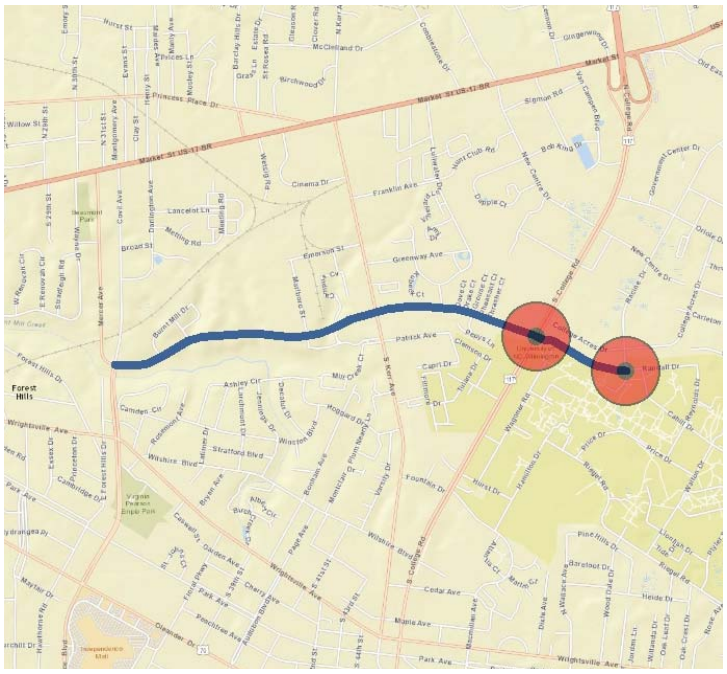
INCREASE CAPACITY STRATEGIES:
- Add general purpose lane

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- U-3831 - Gordon Rd: Widen to multi-lanes
- U-4751 - Military Cutoff Rd Ext: Multi-lanes on new location

Segment 10 Randall Parkway

Independence Boulevard to Racine Drive



CONGESTION RANK: 10 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commuting Corridor

MILEAGE ALONG CORRIDOR: 2.0 Miles

NUMBER OF HOTSPOTS: 2
1. College Road
2. UNCW Campus

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE:
Wrightsville Avenue

SEGMENT OVERALL SCORE: 41

Data		
Average Travel Time AM/PM	5:52 / 6:57	
Average Delay AM/PM	2:05 / 3:11	
Rear End Collisions	9	
Bicycle Crashes	10	10
Pedestrian Crashes	0	
Average Vehicle Volume	18,391	
Truck Percentage	N/A	
Bicycle Counts AM/PM	31 / 3	
Pedestrian Counts AM/PM	21 / 7	
Transit Boarding	127,871	

Performance Measure Points	
Travel Time	10
Safety	6
Volume	15
Transit Performance	10

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Land Use - Construct supportive collector street network with new development

SHIFT MODE OF TRIP STRATEGIES:
- Transit - Increase frequency: Increase existing public transit fixed routes
- Improve multimodal access at intersections
- Improve bicycle storage
- Implement bicycle sharing program

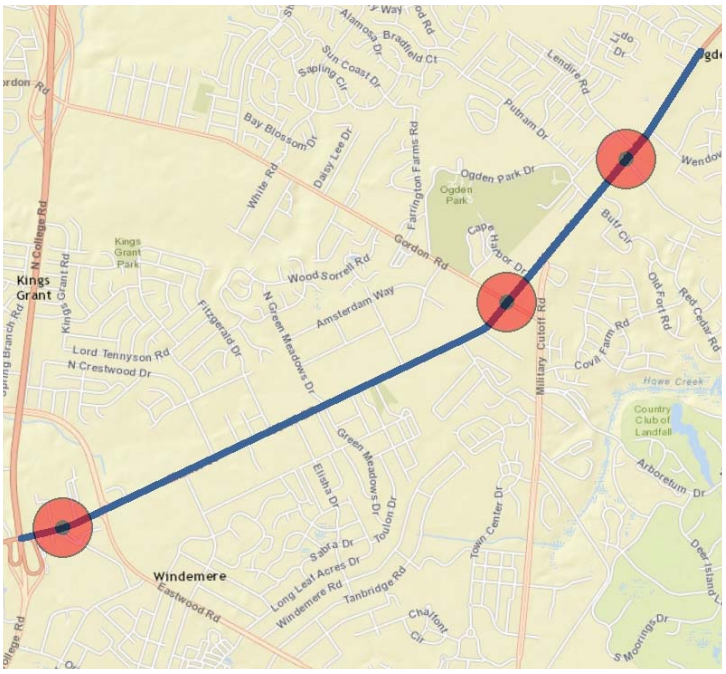
IMPROVE OPERATIONS STRATEGIES:
- Geometric Intersection Improvements: Change intersection use by changing the physical layout

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- U-3338B - Kerr Ave - Randall Pkwy to MLK Jr. Pkwy: Widen to multi-lanes
- U-5702 - College Rd: Access management and travel time improvements
- UNCW Bike Share Program

Segment 11 Market Street

College Road to Torchwood Drive/Bayshore Drive



CONGESTION RANK: 11 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commercial Corridor

MILEAGE ALONG CORRIDOR: 4.2 Miles

NUMBER OF HOTSPOTS: 3
1. Eastwood Road
2. Gordon Road
3. Middlesound Loop Road

PEAK HOURS: 7:00-9:00AM / 4:30-6:30PM

ALTERNATE ROUTE:
Military Cutoff Road Extension (future)

SEGMENT OVERALL SCORE: 40

Data		
Average Travel Time AM/PM	7:51 / 7:21	
Average Delay AM/PM	1:51 / 1:21	
Rear End Collisions	59	
Bicycle Crashes	5	7
Pedestrian Crashes	2	
Average Vehicle Volume	45,267	
Truck Percentage	N/A	
Bicycle Counts AM/PM	11 / 9	
Pedestrian Counts AM/PM	11 / 10	
Transit Boarding	N/A	

Performance Measure Points	
Travel Time	6
Safety	7
Volume	27
Transit Performance	N/A

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Alternative Roadways: Improve usage of non-CMP roadways to remove demand on CMP network
- Land Use - Construct supportive collector street network with new development

SHIFT MODE OF TRIP STRATEGIES:
- Expand pedestrian and bicycle network
- Improve multimodal access at intersections

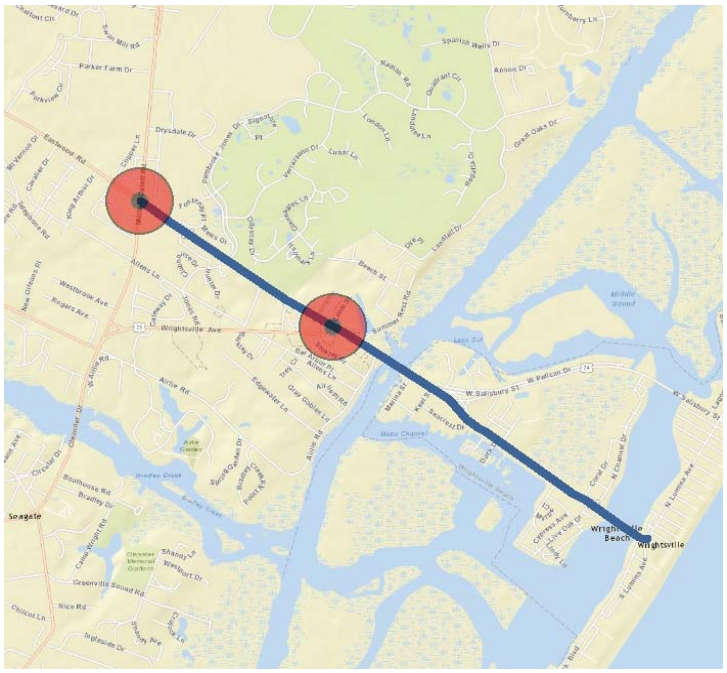
IMPROVE OPERATIONS STRATEGIES:
- Access Management: Limit access to land uses through limiting turning movements and conflict points
- Geometric Intersection Improvements: Change intersection use by changing the physical layout

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- U-4751 - Military Cutoff Rd Ext: Multi-lanes on new location
- Market Street Corridor Study: Provides collector street map to show critical connection points throughout the corridor
- U-4902C - Market St - MLK Jr. Pkwy to Station Rd: Improve access management
- U-4902D - Market St - Lendire Rd to Marsh Oaks Dr: Improve access management
- FS-1503A - US 74 and Market St: Convert at-grade intersection to an interchange

Segment 12 Eastwood Rd/US 76/Causeway Dr

Military Cutoff Road to Lumina Avenue



CONGESTION RANK: 12 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commercial Corridor Destination Corridor
Tourist Route

MILEAGE ALONG CORRIDOR: 2.4 Miles

NUMBER OF HOTSPOTS: 2
1. Military Cutoff Road
2. Wrightsville Avenue

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE: NONE

SEGMENT OVERALL SCORE: 39

Data		
Average Travel Time AM/PM	5:43 / 5:53	
Average Delay AM/PM	1:47 / 1:57	
Rear End Collisions	58	
Bicycle Crashes	3	6
Pedestrian Crashes	3	
Average Vehicle Volume	20,045	
Truck Percentage	N/A	
Bicycle Counts AM/PM	69 / 33	
Pedestrian Counts AM/PM	59 / 51	
Transit Boarding	N/A	

Performance Measure Points	
Travel Time	7
Safety	7
Volume	25
Transit Performance	N/A

WMPO CONGESTION MITIGATION TECHNIQUES

SHIFT MODE OF TRIP STRATEGIES:
- Improve multimodal access at intersections
- Improve bicycle storage
- Implement bicycle sharing program

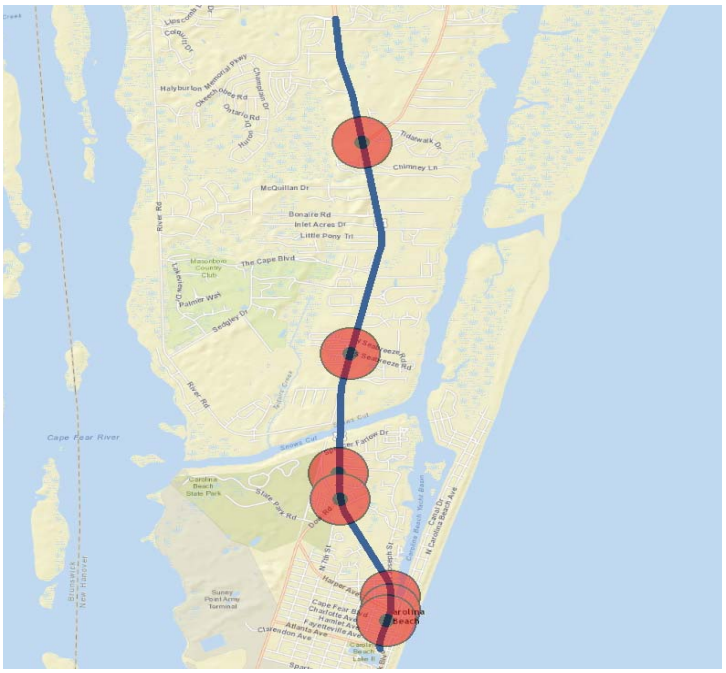
INCREASE CAPACITY STRATEGIES:
- Convert intersection to interchange: Improves capacity with at-grade or grade separated alternative

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- STP-DA - Heide Trask Drawbridge Walkway: Construction of walkway/pier underneath drawbridge
- U-5710 - Eastwood Rd and Military Cutoff Rd: Convert at grade intersection to a interchange

Segment 13 US 421 / Carolina Beach Road

Halyburton Parkway to Atlanta Avenue



CONGESTION RANK: 13 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commercial Corridor Destination Corridor
Tourist Route

MILEAGE ALONG CORRIDOR: 5.2 Miles

NUMBER OF HOTSPOTS: 7

1. Myrtle Grove Road
2. Seabreeze Road
3. Access Road
4. Risley Road/Dow Road
5. Carl Winner Avenue
6. Cape Fear Boulevard
7. Harper Avenue

PEAK HOURS: 6:30-8:30AM / 5:00-7:00PM

ALTERNATE ROUTE:
River Road and Dow Road

SEGMENT OVERALL SCORE: 38

Data		
Average Travel Time AM/PM	7:49 / 7:57	
Average Delay AM/PM	0:44 / 0:53	
Rear End Collisions	59	
Bicycle Crashes	1	4
Pedestrian Crashes	3	
Average Vehicle Volume	22,977	
Truck Percentage	N/A	
Bicycle Counts AM/PM	42 / 33	
Pedestrian Counts AM/PM	66 / 67	
Transit Boarding	12,549	

Performance Measure Points	
Travel Time	3
Safety	6
Volume	27
Transit Performance	2

WMPO CONGESTION MITIGATION TECHNIQUES

SHIFT MODE OF TRIP STRATEGIES:

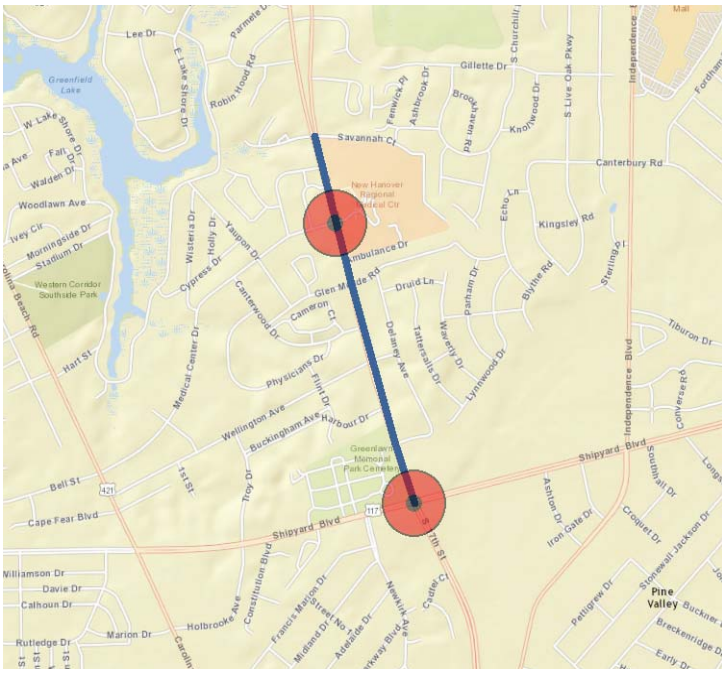
- Transit - Increase frequency: Increase existing public transit fixed routes
- Establish Park & Ride
- Expand pedestrian and bicycle network

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- Cape Fear Transportation 2040 - River Road Widening: Independence Blvd to Carolina Beach Rd

Segment 14 17th Street

Savannah Court to Shipyard Boulevard



CONGESTION RANK: 14 OF 29

CORRIDOR FUNCTIONAL TYPES:
Destination Corridor

MILEAGE ALONG CORRIDOR: 1.1 Miles

NUMBER OF HOTSPOTS: 2
1. Shipyard Boulevard
2. Medical Center Drive

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE:
Independence Boulevard
Carolina Beach Road

SEGMENT OVERALL SCORE: 36

Data		
Average Travel Time AM/PM	3:19/3:51	
Average Delay AM/PM	1:34/2:05	
Rear End Collisions	37	
Bicycle Crashes	0	1
Pedestrian Crashes	1	
Average Vehicle Volume	28,982	
Truck Percentage	N/A	
Bicycle Counts AM/PM	5 / 3	
Pedestrian Counts AM/PM	29 / 36	
Transit Boarding	91,609	

Performance Measure Points	
Travel Time	7
Safety	3
Volume	16
Transit Performance	9

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- TDM - Encourage alternate work schedules
- TDM - Encourage carpools & vanpools
- TDM - Encourage employer shuttles: A shuttle to provide transportation connections for employees

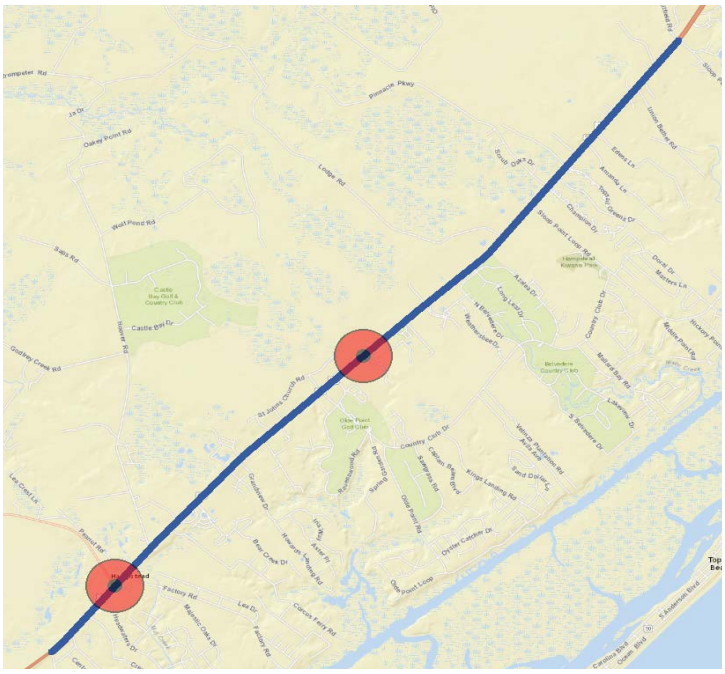
SHIFT MODE OF TRIP STRATEGIES:
- Transit - Increase frequency: Increase existing public transit fixed routes
- Expand pedestrian and bicycle network
- Improve multimodal access at intersections
- Improve bicycle storage

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- EB-5600 - South 17th Street Multi-use Path: Construct multi-use path

Segment 15 US 17

Washington Acres Road to Sloop Point Loop Road



CONGESTION RANK: 15 OF 29

CORRIDOR FUNCTIONAL TYPES:

Commercial Corridor — Commuting Corridor
Freight Corridor — Tourist Route

MILEAGE ALONG CORRIDOR: 7.4 Miles

NUMBER OF HOTSPOTS: 2

1. NC 210
2. Topsail High School Vicinity (AM)

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE:
Hampstead Bypass (future)

SEGMENT OVERALL SCORE: 35

Data		
Average Travel Time AM/PM	13:00 / 10:35	
Average Delay AM/PM	4:30 / 1:49	
Rear End Collisions	149	
Bicycle Crashes	0	4
Pedestrian Crashes	4	
Average Vehicle Volume	35,896	
Truck Percentage	1.39%	
Bicycle Counts AM/PM	5 / 8	
Pedestrian Counts AM/PM	6 / 6	
Transit Boarding	N/A	

Performance Measure Points	
Travel Time	12
Safety	8
Volume	15
Transit Performance	N/A

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:

- Alternative Roadways: Improve usage of non-CMP roadways to remove demand on CMP network

SHIFT MODE OF TRIP STRATEGIES:

- Expand pedestrian and bicycle network
- Improve multimodal access at intersections

IMPROVE OPERATIONS STRATEGIES:

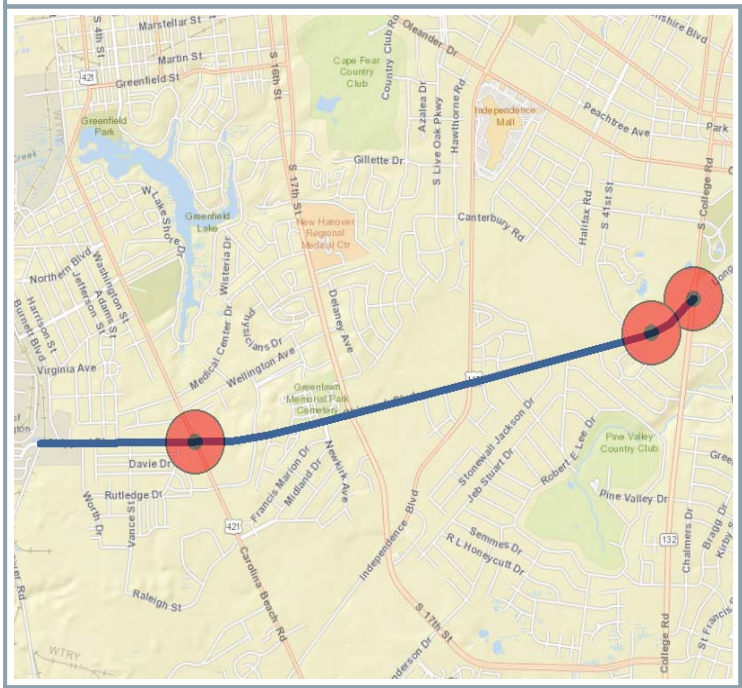
- Access Management: Limit access to land uses through limiting turning movements and conflict points

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- H090215 A/B - Hampstead Bypass: Anticipated in 2017 STIP
- U-5732 - US 17 Washington Acres Rd to Sloop Point Loop Rd: Convert to superstreet

Segment 16 Shipyard Boulevard

River Road to College Road



CONGESTION RANK: 16 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commercial Corridor

MILEAGE ALONG CORRIDOR: 3.6 Miles

NUMBER OF HOTSPOTS: 3
1. Carolina Beach Road
2. College Road
3. Hoggard High School Vicinity (AM)

PEAK HOURS: 7:00-9:00AM / 4:30-6:30PM

ALTERNATE ROUTE: None

SEGMENT OVERALL SCORE: 33

Data		
Average Travel Time AM/PM	6:18 / 7:49	
Average Delay AM/PM	1:43 / 3:26	
Rear End Collisions	4	
Bicycle Crashes	2	4
Pedestrian Crashes	2	
Average Vehicle Volume	22,524	
Truck Percentage	11.72%	
Bicycle Counts AM/PM	N/A	
Pedestrian Counts AM/PM	N/A	
Transit Boarding	68,672	

Performance Measure Points	
Travel Time	10
Safety	3
Volume	14
Transit Performance	6

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Land Use - Accommodate all modes in new development
- Land Use - Construct supportive collector street network with new development

SHIFT MODE OF TRIP STRATEGIES:
- Transit - Increase frequency: Increase existing public transit fixed routes
- Land Use - TOD: Utilize mixed-use areas designed to maximize access to public transit

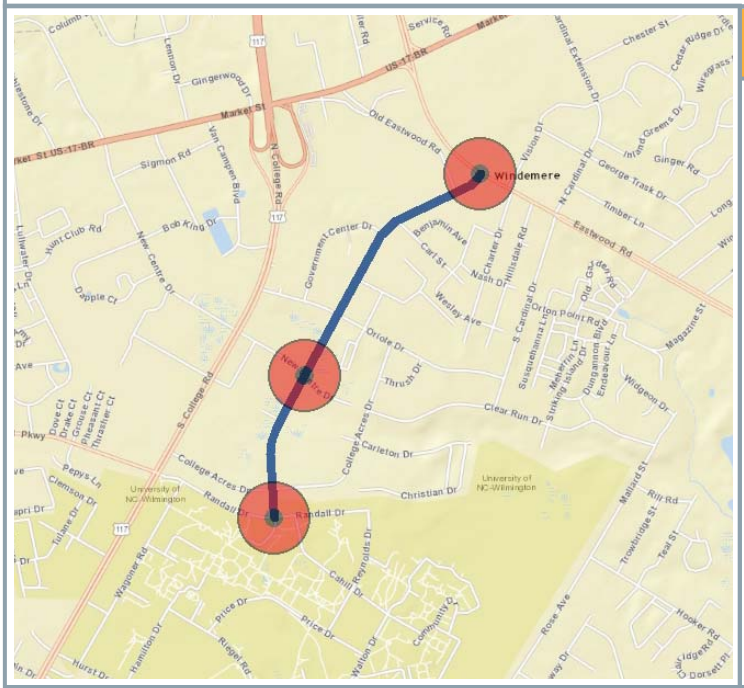
IMPROVE OPERATIONS STRATEGIES:
- Access Management: Limits access to land uses through limiting turning movements and conflict points

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- STP-DA - Shipyard Blvd Bus Pull-out and Sidewalks: Bus pull-out and loading area along Shipyard Blvd with sidewalk from Rutledge Dr to Vance St
- Carolina Beach Rd and Shipyard Blvd Improvements: Anticipated in 2017 STIP

Segment 17 Racine Drive

Randall Parkway to Eastwood Road



CONGESTION RANK: 17 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commercial Corridor Commuting Corridor

MILEAGE ALONG CORRIDOR: 2.3 Miles

NUMBER OF HOTSPOTS: 3
1. Randall Drive
2. Eastwood Road
3. New Centre Drive

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE:
College Road

SEGMENT OVERALL SCORE: 29

Data		
Average Travel Time AM/PM	3:43 / 4:20	
Average Delay AM/PM	1:32 / 2:09	
Rear End Collisions	1	
Bicycle Crashes	5	9
Pedestrian Crashes	4	
Average Vehicle Volume	15,087	
Truck Percentage	N/A	
Bicycle Counts AM/PM	N/A	
Pedestrian Counts AM/PM	N/A	
Transit Boarding	110,646	

Performance Measure Points	
Travel Time	7
Safety	6
Volume	6
Transit Performance	10

WMPO CONGESTION MITIGATION TECHNIQUES

SHIFT MODE OF TRIP STRATEGIES:
- Transit Express Routes
- Transit - Increase frequency: Increase existing public transit fixed routes
- Expand pedestrian and bicycle network
- Improve multimodal access at intersections
- Improve bicycle storage

Segment 18 US 117/College Road

Holly Shelter Road to Gordon Road

CONGESTION RANK: 18 OF 29

CORRIDOR FUNCTIONAL TYPES:
Community Corridor

MILEAGE ALONG CORRIDOR: 5.8 Miles

NUMBER OF HOTSPOTS: 4

1. E.A. Laney School Vicinity
2. Bavarian Lane/Murrayville Road
3. Castle Hayne Road
4. Blue Clay Road

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE:
Castle Hayne Road and I-40

SEGMENT OVERALL SCORE: 28

Data		
Average Travel Time AM/PM	12:23/11:33	
Average Delay AM/PM	3:10/2:33	
Rear End Collisions	138	
Bicycle Crashes	0	2
Pedestrian Crashes	2	
Average Vehicle Volume	17,584	
Truck Percentage	N/A	
Bicycle Counts AM/PM	N/A	
Pedestrian Counts AM/PM	N/A	
Transit Boarding	44,064	

Performance Measure Points	
Travel Time	11
Safety	7
Volume	6
Transit Performance	4

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Land Use - Accommodate all modes in new development

SHIFT MODE OF TRIP STRATEGIES:
- Transit - Increase frequency: Increase existing public transit fixed routes
- Expand pedestrian and bicycle network
- Improve multimodal access at intersections

IMPROVE OPERATIONS STRATEGIES:
- Access Management: Limit access to land uses through limiting turning movements and conflict points

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- Laney High School Multi-Use Trail: Coordination between developer, Laney High School and NCDOT

Segment 19 US 17/74/76

River Road to 5th Avenue

CONGESTION RANK: 19 OF 29

CORRIDOR FUNCTIONAL TYPE:
Commuting Corridor Freight Corridor
Tourist Route

MILEAGE ALONG CORRIDOR: 3.2 Miles

NUMBER OF HOTSPOTS: 4
1. Cape Fear Memorial Bridge
2. 3rd Street
3. US 421 Interchange
4. US 74/76 Causeway Widening Construction Zone

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE: None

SEGMENT OVERALL SCORE: 28

Data		
Average Travel Time AM/PM	4:17 / 4:31	
Average Delay AM/PM	0:41 / 0:58	
Rear End Collisions	60	
Bicycle Crashes	0	1
Pedestrian Crashes	1	
Average Vehicle Volume	56,367	
Truck Percentage	9.70%	
Bicycle Counts AM/PM	N/A	
Pedestrian Counts AM/PM	N/A	
Transit Boarding	14,359	

Performance Measure Points	
Travel Time	3
Safety	4
Volume	19
Transit Performance	2

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Alternative Roadways: Improve usage of non-CMP roadways to remove demand on CMP network
- TDM - Encourage alternate work schedules
- TDM - Encourage carpools & vanpools
- TDM - Encourage employer shuttles: A shuttle to provide transportation connections for employees

SHIFT MODE OF TRIP STRATEGIES:
- Transit - Increase frequency: Increase existing public transit fixed routes
- Establish Park and Ride lots

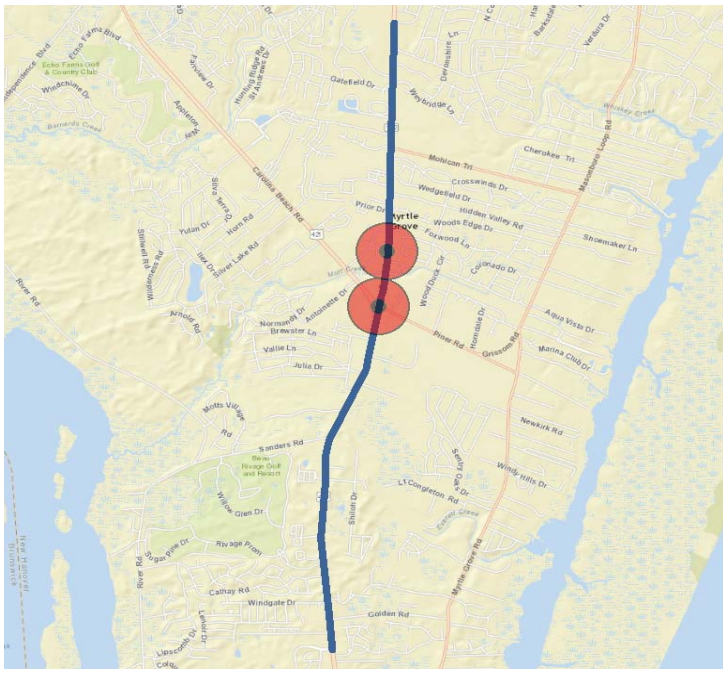
INCREASE CAPACITY STRATEGIES:
- Add general purpose lane

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- U-4738 - Cape Fear Crossing: Construct new facility with structure over Cape Fear River
- R-3601 - US 17/US 74/US 76: Add additional lanes on north and southbound lanes and widen bridges

Segment 20 College Rd/Carolina Beach Rd

Pinecliff Drive to Halyburton Parkway



CONGESTION RANK: 20 OF 29

CORRIDOR FUNCTIONAL TYPES:
- Commercial Corridor
- Tourist Route
- Commuting Corridor

MILEAGE ALONG CORRIDOR: 4.7 Miles

NUMBER OF HOTSPOTS: 2
1. Carolina Beach Road/Piner Road
2. Lowes/Myrtle Grove Library

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE:
- River Road

SEGMENT OVERALL SCORE: 27

Data		
Average Travel Time AM/PM	7:33 / 7:05	
Average Delay AM/PM	1:45 / 1:20	
Rear End Collisions	268	
Bicycle Crashes	1	3
Pedestrian Crashes	2	
Average Vehicle Volume	36,959	
Truck Percentage	N/A	
Bicycle Counts AM/PM	N/A	
Pedestrian Counts AM/PM	N/A	
Transit Boarding	29,247	

Performance Measure Points	
Travel Time	6
Safety	9
Volume	10
Transit Performance	2

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Land Use - Manage Growth: Encourage growth in appropriate areas
- TDM - Encourage Carpools & Vanpools
- Land Use - Construct supportive collector street network with new development

SHIFT MODE OF TRIP STRATEGIES:
- Transit - Increase frequency
- Land Use - TOD: Utilize mixed-use areas designed to maximize access to public transit
- Improve multimodal access at intersections
- Establish Park & Ride lots

IMPROVE OPERATIONS STRATEGIES:
- Access Management: Limit access to land uses through limiting turning movements and conflict points
- Improve Signage: Better inform traffic of route options and better channelize traffic to improve patterns

INCREASE CAPACITY STRATEGIES:
- Add general purpose lanes
- Convert intersection to interchange

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- U-5790 - Carolina Beach Rd: Widen existing roadway and construct flyover at College Rd

Segment 21 US 17/US 421/NC 133

USS North Carolina Road to 3rd Street

CONGESTION RANK: 21 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commuting Corridor Freight Corridor
Tourist Route

MILEAGE ALONG CORRIDOR: 1.6 Miles

NUMBER OF HOTSPOTS: 2
1. Thomas Rhodes Bridge
2. Isabel Holmes Bridge

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE:
I-140 Wilmington Bypass (Future)

SEGMENT OVERALL SCORE: 26

Data		
Average Travel Time AM/PM	3:01/2:41	
Average Delay AM/PM	1:08/0:48	
Rear End Collisions	22	
Bicycle Crashes	0	2
Pedestrian Crashes	2	
Average Vehicle Volume	55,044	
Truck Percentage	8.86%	
Bicycle Counts AM/PM	N/A	
Pedestrian Counts AM/PM	N/A	
Transit Boarding	N/A	

Performance Measure Points	
Travel Time	4
Safety	3
Volume	19
Transit Performance	N/A

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Alternative Roadways: Improve usage of non-CMP roadways to remove demand on CMP network
- TDM - Encourage alternate work schedules
- TDM - Encourage carpools & vanpools
- TDM - Encourage employer shuttles: A shuttle to provide transportation connections for employees

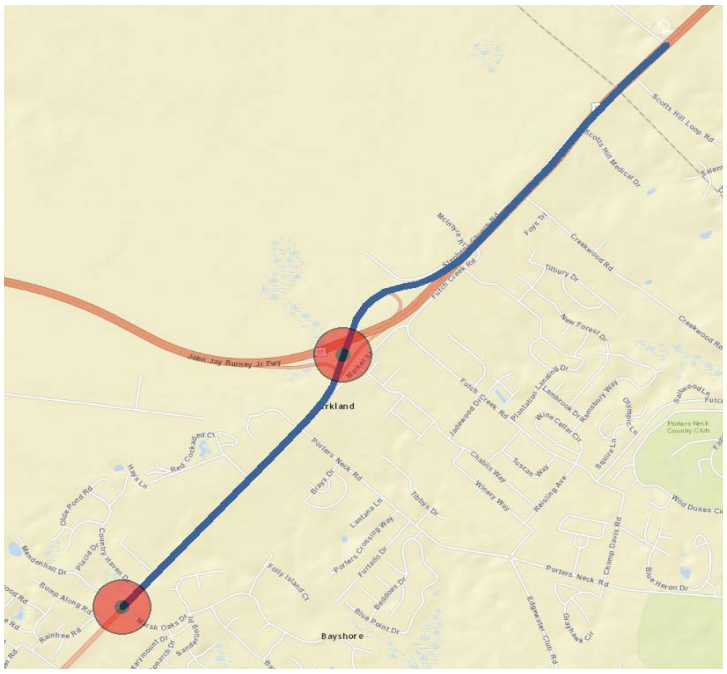
INCREASE CAPACITY STRATEGIES:
- Convert intersection to interchange: Improves capacity with at-grade or grade separated alternative

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- R-2633 - I-140: Four lane divided freeway on new location
- U-5731 - US 17/US 421: A fly-over and free flow ramp at interchange

Segment 22 US 17/Market Street

Marsh Oaks Drive/Mendenhall Drive to Sidbury Road



CONGESTION RANK: 22 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commercial Corridor Commuting Corridor

MILEAGE ALONG CORRIDOR: 3.0 Miles

NUMBER OF HOTSPOTS: 2
1. US 17 Interchange
2. Porters Neck Road

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE:
Military Cutoff Road Extension (future)

SEGMENT OVERALL SCORE: 24

Data		
Average Travel Time AM/PM	8:23 / 10:35	
Average Delay AM/PM	3:28 / 5:46	
Rear End Collisions	17	
Bicycle Crashes	0	0
Pedestrian Crashes	0	
Average Vehicle Volume	37,094	
Truck Percentage	N/A	
Bicycle Counts AM/PM	0 / 2	
Pedestrian Counts AM/PM	6 / 2	
Transit Boarding	N/A	

Performance Measure Points	
Travel Time	10
Safety	1
Volume	13
Transit Performance	N/A

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Alternative Roadways: Improve usage of non-CMP roadways to remove demand on CMP network

SHIFT MODE OF TRIP STRATEGIES:
- Transit - Increase frequency: Increase existing public transit fixed routes
- Expand pedestrian and bicycle network
- Improve multimodal access at intersections

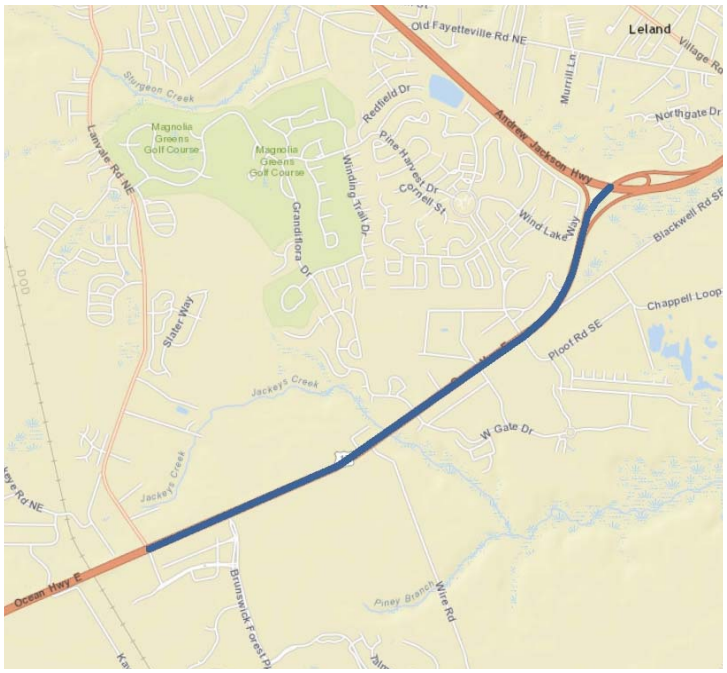
IMPROVE OPERATIONS STRATEGIES:
- Geometric Intersection Improvements: Change intersection use by changing the physical layout

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- U-4751 - Military Cutoff Rd Ext: Multi-lanes on new location
- U-4902 - US 17 Business: Access management improvements
- H092015-A/B - US 17 Hampstead Bypass: Construct freeway on new location

Segment 23 Ocean Highway

Lanvalle Road to US 74/76 Andrew Jackson Highway



CONGESTION RANK: 23 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commercial Corridor Commuting Corridor
Tourist Route

MILEAGE ALONG CORRIDOR: 3.0 Miles

NUMBER OF HOTSPOTS: N/A

PEAK HOURS: 6:30-8:30AM / 5:00-7:00PM

ALTERNATE ROUTE:
I-140 Wilmington Bypass (Future)

SEGMENT OVERALL SCORE: 24

Data		
Average Travel Time AM/PM	4:26/4:45	
Average Delay AM/PM	0:21/0:37	
Rear End Collisions	87	
Bicycle Crashes	0	0
Pedestrian Crashes	0	
Average Vehicle Volume	41,034	
Truck Percentage	N/A	
Bicycle Counts AM/PM	0 / 1	
Pedestrian Counts AM/PM	3 / 3	
Transit Boarding	28,718	

Performance Measure Points	
Travel Time	2
Safety	5
Volume	15
Transit Performance	2

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Alternative Roadways: Improve usage of non-CMP roadways to remove demand on CMP network

REDUCE DEMAND STRATEGIES:
- Land Use - Construct supportive collector street network with new development

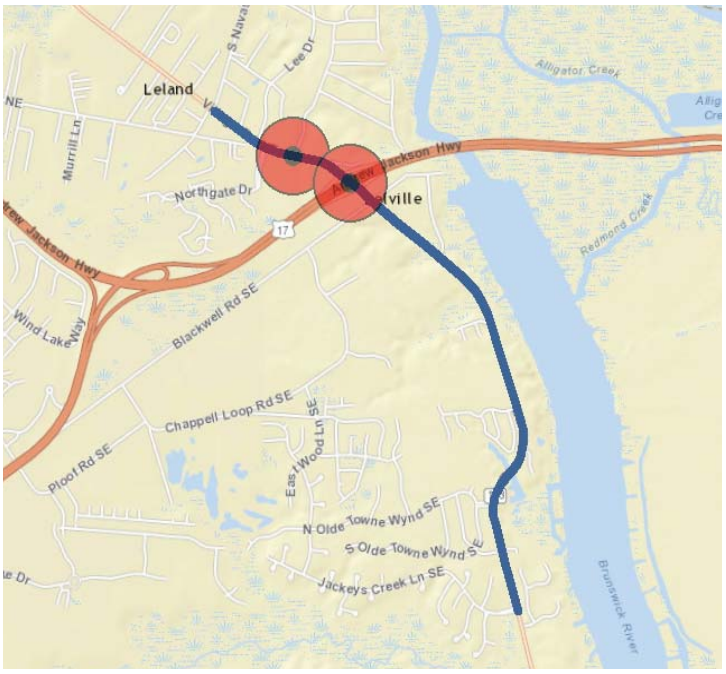
SHIFT MODE OF TRIP STRATEGIES:
- Transit - Increase frequency: Increase existing public transit fixed routes
- Improve multimodal access at intersections
- Establish park and ride

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- R-2633 - I-140 Wilmington Bypass: Four way divided freeway on new location
- Connecting Northern Brunswick County Collector Street Plan: Determines collector street spacing based on anticipated land uses and the environmental constraints inherent to the region

Segment 24 Village Road/NC 133

Navassa Road to Jackey's Creek Lane



CONGESTION RANK: 24 OF 29

CORRIDOR FUNCTIONAL TYPES:

Commercial Corridor — Commuting Corridor
Freight Corridor — Tourist Route

MILEAGE ALONG CORRIDOR: 2.7 Miles

NUMBER OF HOTSPOTS: 2

1. Andrew Jackson Highway
2. Fairview Road

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE:
Ocean Highway

SEGMENT OVERALL SCORE: 23

Data		
Average Travel Time AM/PM	5:07 / 4:43	
Average Delay AM/PM	1:00 / 0:36	
Rear End Collisions	40	
Bicycle Crashes	0	0
Pedestrian Crashes	0	
Average Vehicle Volume	22,353	
Truck Percentage	4.16%	
Bicycle Counts AM/PM	15 / 20	
Pedestrian Counts AM/PM	29 / 27	
Transit Boarding	N/A	

Performance Measure Points	
Travel Time	3
Safety	2
Volume	18
Transit Performance	N/A

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:

- Alternative Roadways: Improve usage of non-CMP roadways to remove demand on CMP network

SHIFT MODE OF TRIP STRATEGIES:

- Expand pedestrian and bicycle network

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- H090713 - NC 133 Widening: Add additional lanes from south of Rabon Way to the interhchange at US 17/74/76
- STP-DA - Westgate Drive Multi-use Path: Construction of a multi-use path along West Gate Dr that runs south and ties into Ricegate Way

Segment 25 US 74/76

Maco Road to NC 133

CONGESTION RANK: 25 OF 29

CORRIDOR FUNCTIONAL TYPES:
Freight Corridor Tourist Route

MILEAGE ALONG CORRIDOR: 9.7 Miles

NUMBER OF HOTSPOTS: 2
1. Maco Road
2. US 17 Junction

PEAK HOURS: 6:30-8:30AM / 5:00-7:00PM

ALTERNATE ROUTE:
I-140 Wilmington Bypass (Future)

SEGMENT OVERALL SCORE: 23

Data		
Average Travel Time AM/PM	10:08/9:35	
Average Delay AM/PM	0:09/0:25	
Rear End Collisions	71	
Bicycle Crashes	0	0
Pedestrian Crashes	0	
Average Vehicle Volume	46,636	
Truck Percentage	9.73%	
Bicycle Counts AM/PM	N/A	
Pedestrian Counts AM/PM	N/A	
Transit Boarding	N/A	

Performance Measure Points	
Travel Time	1
Safety	4
Volume	18
Transit Performance	N/A

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Alternative Roadways: Improve usage of non-CMP roadways to remove demand on CMP network

IMPROVE OPERATIONS STRATEGIES:
- Access Management: Limit access to land uses through limiting turning movements and conflict points

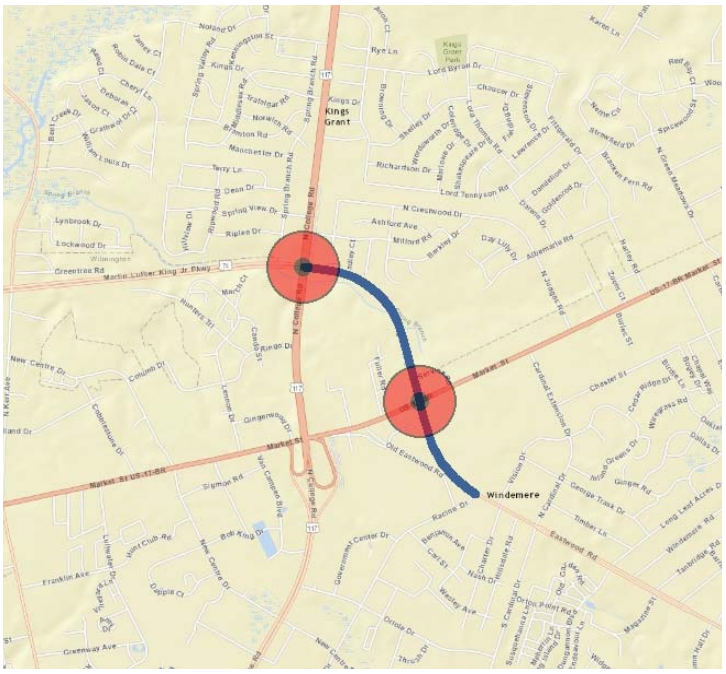
INCREASE CAPACITY STRATEGIES:
- Convert intersection to interchange: Improves capacity with at-grade or grade separated alternative

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- R-2633 - I-140 Wilmington Bypass: Four way divided freeway on new location
- CTP Projects - R-64 Village Rd Widening: Old Fayetteville Rd and Lanvale Rd Interchange

Segment 26 MLK Jr. Parkway/Eastwood Road

College Road to Racine Drive



CONGESTION RANK: 26 OF 29

CORRIDOR FUNCTIONAL TYPES:
Commuting Corridor Tourist Routes

MILEAGE ALONG CORRIDOR: 1.1 Miles

NUMBER OF HOTSPOTS: 2
1. College Road
2. Market Street

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE:
Market Street

SEGMENT OVERALL SCORE: 22

Data		
Average Travel Time AM/PM	4:08 / 4:35	
Average Delay AM/PM	2:33 / 3:00	
Rear End Collisions	39	
Bicycle Crashes	0	1
Pedestrian Crashes	1	
Average Vehicle Volume	25,021	
Truck Percentage	N/A	
Bicycle Counts AM/PM	N/A	
Pedestrian Counts AM/PM	N/A	
Transit Boarding	N/A	

Performance Measure Points	
Travel Time	11
Safety	3
Volume	8
Transit Performance	N/A

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Alternative Roadways: Improve usage of non-CMP roadways to remove demand on CMP network

SHIFT MODE OF TRIP STRATEGIES:
- Transit - Express Routes: Encourage new transit express routes along corridor
- Transit - Increase frequency: Increase existing public transit fixed routes
- Improve multimodal access at intersections

IMPROVE OPERATIONS STRATEGIES:
- Geometric Intersection Improvements: Change intersection use by changing the physical layout

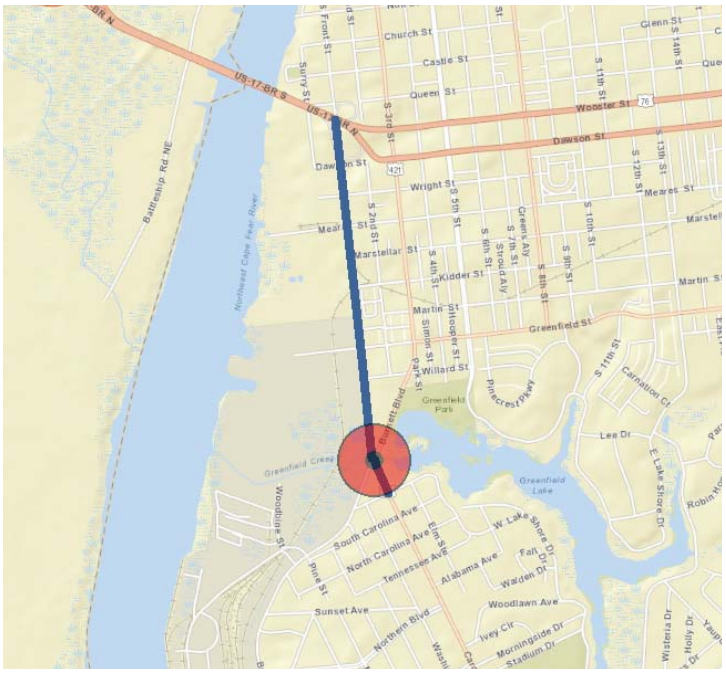
INCREASE CAPACITY STRATEGIES:
- Convert intersection to interchange: Improves capacity with at-grade or grade separated alternative

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- U-4902C - MLK Jr. Pkwy to Station Rd: Improve access management
- U-5792 - MLK Jr. Pkwy and College Rd: Convert at-grade intersection to interchange
- U-5880 - MLK Jr. Pkwy: Upgrade interchange

Segment 27 Front Street

Lake Shore Drive to Cape Fear Memorial Bridge



CONGESTION RANK: 27 OF 29

CORRIDOR FUNCTIONAL TYPE:
Freight Corridor

MILEAGE ALONG CORRIDOR: 1.1 Miles

NUMBER OF HOTSPOTS: 1
1. 3rd Street/Burnett Boulevard

PEAK HOURS: 7:00-9:00AM / 4:30-6:30PM

ALTERNATE ROUTE:
3rd Street

SEGMENT OVERALL SCORE: 21

Data		
Average Travel Time AM/PM	2:22 / 2:48	
Average Delay AM/PM	0:26 / 0:51	
Rear End Collisions	15	
Bicycle Crashes	1	1
Pedestrian Crashes	0	
Average Vehicle Volume	26,048	
Truck Percentage	6.35%	
Bicycle Counts AM/PM	N/A	
Pedestrian Counts AM/PM	N/A	
Transit Boarding	51,514	

Performance Measure Points	
Travel Time	2
Safety	2
Volume	12
Transit Performance	5

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES::
- Alternative Roadways: Improve usage of non-CMP roadways to remove demand on CMP network

IMPROVE OPERATIONS STRATEGIES:
- Improve signage: Better inform traffic of route options and better channelize traffic to improve patterns

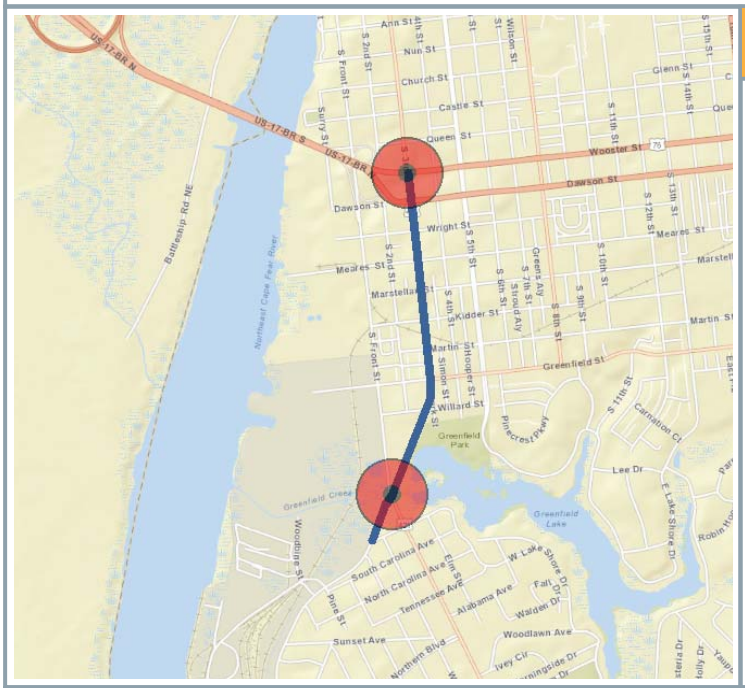
INCREASE CAPACITY STRATEGIES:
- Add general purpose lanes

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- U-5734 - Front St - Cape Fear Memorial Bridge to Burnett Blvd: Widen to multi-lanes

Segment 28 3rd Street

Kentucky Avenue to Wooster Street



CONGESTION RANK: 28 OF 29

CORRIDOR FUNCTIONAL TYPES:
Tourist Route

MILEAGE ALONG CORRIDOR: 1.1 Miles

NUMBER OF HOTSPOTS: 2
1. Dawson St./Wooster St.
2. Front St./Carolina Beach Rd.

PEAK HOURS: 7:00-9:00AM / 4:45-6:45PM

ALTERNATE ROUTE:
Front Street

SEGMENT OVERALL SCORE: 13

Data		
Average Travel Time AM/PM	3:32 / 3:34	
Average Delay AM/PM	1:32 / 1:34	
Rear End Collisions	33	
Bicycle Crashes	0	1
Pedestrian Crashes	1	
Average Vehicle Volume	12,869	
Truck Percentage	N/A	
Bicycle Counts AM/PM	N/A	
Pedestrian Counts AM/PM	N/A	
Transit Boarding	N/A	

Performance Measure Points	
Travel Time	6
Safety	3
Volume	4
Transit Performance	N/A

WMPO CONGESTION MITIGATION TECHNIQUES

REDUCE DEMAND STRATEGIES:
- Alternative Roadways: Improve usage of non-CMP roadways to remove demand on CMP network

SHIFT MODE OF TRIP STRATEGIES:
- Transit - Increase frequency: Increase existing public transit fixed routes

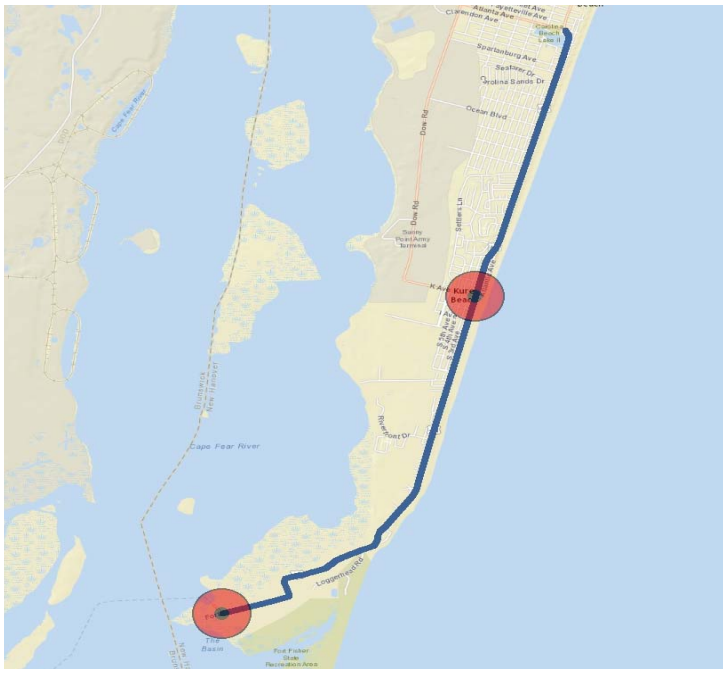
IMPROVE OPERATIONS STRATEGIES:
- Improve signage: Better inform traffic of route options and better channelize traffic to improve patterns

CURRENT IMPLEMENTATION PROJECTS AND PLANS

- U-5734 - Front St - Cape Fear Memorial Bridge to Burnett Blvd: Widen to multi-lanes

Segment 29 US 421 / Lake Park Blvd

Atlanta Avenue to Buzzards Bay



CONGESTION RANK: 29 OF 29

CORRIDOR FUNCTIONAL TYPES:
Tourist Route

MILEAGE ALONG CORRIDOR: 5.9 Miles

NUMBER OF HOTSPOTS: 2
1. K Ave (Kure Pier)
2. Fort Fisher Boulevard

PEAK HOURS: 6:30-8:30AM / 5:00-7:00PM

ALTERNATE ROUTE: None

SEGMENT OVERALL SCORE: 11

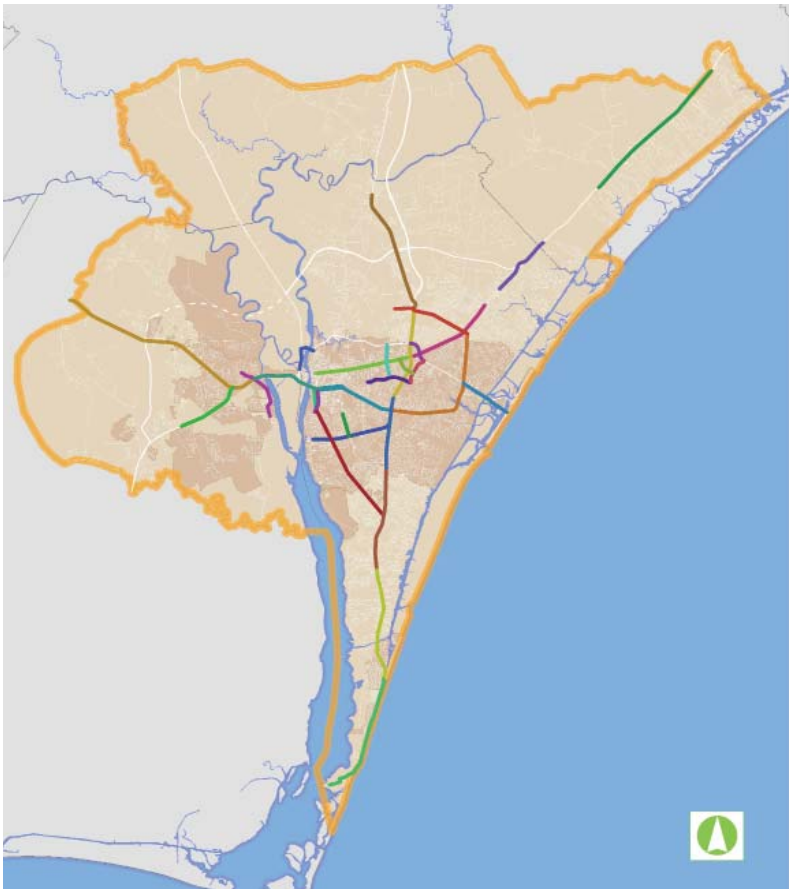
Data		
Average Travel Time AM/PM	11:21 / 12:03	
Average Delay AM/PM	1:04 / 1:46	
Rear End Collisions	8	
Bicycle Crashes	2	2
Pedestrian Crashes	0	
Average Vehicle Volume	8,867	
Truck Percentage	N/A	
Bicycle Counts AM/PM	N/A	
Pedestrian Counts AM/PM	N/A	
Transit Boarding	N/A	

Performance Measure Points	
Travel Time	5
Safety	2
Volume	4
Transit Performance	N/A

WMPO CONGESTION MITIGATION TECHNIQUES

SHIFT MODE OF TRIP STRATEGIES:
- Transit - Increase frequency: Increase existing public transit fixed routes
- Establish Park & Ride
- Improve multimodal access at intersection

System Monitoring



In addition to analyzing specific segments of the CMP system, this report also evaluates how our region is performing as a whole. The system monitoring performance measures are set in place to identify, assess, and quickly communicate information about the overall network.

The preliminary system-wide performance measures are the following:

- Safe
- Efficient
- Appropriate
- Responsible
- Integrated
- Multi-Modal

Following the criteria listed in the CMP, the data below represents the existing conditions of our current system as a whole. Over the next two years these performance measures will again be collected to compare how the system has improved after the strategies have been identified in the segment snapshots.

PERFORMANCE MEASURE ANALYSIS

Safe

Number of bicycle and pedestrian crashes in the WMPO area within 2-year timeframe	329
Number of rear-end collisions in the WMPO area within a 2-year timeframe	3,845

Efficient

Bicycle and pedestrian corridor counts per capita in the WMPO area	2,648
Number of CMP corridor intersection legs with pedestrian indication at intersections	93
Average travel time of the WMPO CMP network	7:05
Average duration of delay at intersections within the WMPO CMP network	2:06
Number of participants in the WMPO's TDM program	402

Appropriate

Percentage of CMP corridor facility improvements that have low difficulty	40%
Percentage of CMP corridor facility improvements that have medium difficulty	12%
Percentage of CMP corridor facility improvements that have high difficulty	48%
Percentage of miles of CMP improvements that incorporated consideration of 2040 projected volumes	59%

Responsible

Percentage of miles of CMP routes that have parallel facilities that alleviate congestion on CMP routes	43%

Integrated

Percentage of WMPO adopted plans is the CMP referenced in over a two year period	50%
Percentage of the WMPO 13 member jurisdictions land use plans referencing the CMP	0%

Multi-Modal

Bicycle and pedestrian CMP corridor counts per capita	2,648

NEXT STEPS

One of the critical parts of the Congestion Management Process Biennial Report is determining which strategies can be used to improve congestion experienced along the identified roadway segments. The segment snapshots have identified which corridors are in the most need of attention. It is up to the WMPO staff and partnering agencies to facilitate the implementation of strategies to improve the CMP network.

This report will also be an essential tool when selecting projects for the WMPO's Metropolitan Transportation Plan (MTP). Congestion is one of an array of factors considered when selecting projects for the WMPO's MTP and subsequently programing projects in the Metropolitan/State Transportation Improvement Program (MTIP/STIP). The biennial report's congestion scores will be a critical tool when identifying and prioritizing projects for the future MTP. The ranking process in this report quantifies a congestion value associated with each CMP corridor. This will allow any project identified in the WMPO's MTP to easily incorporate a CMP score as one of the evaluating components in the MTP's final project score.

Since the CMP is an ongoing data collection and analysis process, following the biennial report there will be a review for the CMP's effectiveness. WMPO staff will assess whether there is a need for the CMP Steering Committee to reconvene to evaluate the existing performance measures and mitigation techniques. We will also evaluate the existing criteria used to score and rank congestion within the region. If an improved process has potential to be more effective than the existing process this will be taken into account for the next biennial report which will be completed in 2018.

ATTACHMENT 2

Analysis of SCA Facilities in North Carolina 2017 LRA (2015-16 Utilization)

		# Rooms	% Rooms	# Cases	% Cases
AS0006	Fayetteville Ambulatory Surgery Center				
	ORs	11	78.57%	11,803	91.13%
	GI Endoscopy Procedure Rooms	3	21.43%	372	2.87%
	Procedure Rooms / Non-surgical	0	0.00%	777	6.00%
	Totals	14	100.00%	12,952	100.00%
AS0009	Greensboro Specialty Surgical Center				
	ORs	3	50.00%	2,216	39.12%
	GI Endoscopy Procedure Rooms	2	33.33%	910	16.07%
	Procedure Room / Non-surgical	1	16.67%	2,538	44.81%
	Totals	6	100.00%	5,664	100.00%
AS0018	Surgical Center of Greensboro				
	ORs	13	100.00%	13,635	91.63%
	GI Endoscopy Procedure Rooms	0	0.00%	0	0.00%
	Procedure Rooms / Non-surgical	0	0.00%	1,246	8.37%
	Totals	13	100.00%	14,881	100.00%
AS00026	Charlotte Surgery Center				
	ORs	7	70.00%	7,715	82.50%
	GI Endoscopy Procedure Rooms	0	0.00%	0	0.00%
	Procedure Rooms / Non-surgical	3	30.00%	1,637	17.50%
	Totals	10	100.00%	9,352	100.00%
AS00022	The Eye Surgery Center of the Carolinas				
	ORs	3	60.00%	6,125	69.10%
	GI Endoscopy Procedure Rooms	0	0.00%	0	0.00%
	Procedure Rooms / Non-surgical	2	40.00%	2,739	30.90%
	Totals	5	100.00%	8,864	100.00%
AS0029	Blue Ridge Surgery Center				
	ORs	6	66.67%	7,344	81.64%
	GI Endoscopy Procedure Rooms	0	0.00%	0	0.00%
	Procedure Rooms / Non-surgical	3	33.33%	1,652	18.36%
	Totals	9	100.00%	8,996	100.00%
AS0005	Eastern Regional Surgical center				
	ORs	4	80.00%	1,374	55.38%
	GI Endoscopy Procedure Rooms	0	0.00%	0	0.00%
	Procedure Rooms / Non-surgical	1	20.00%	1,107	44.62%
	Totals	5	100.00%	2,481	100.00%
All NC	SCA Combined Facilities	# Rooms	% of Total	# Cases	% of Total
	OR Combined of SCA NC Facilities	47	75.81%	50,212	79.46%
	GI Endoscopy Combined	5	8.06%	1,282	2.03%
	Procedure Rooms / Non-surgical	10	16.13%	11,696	18.51%
	Totals OR, GI Endo and Proc Rooms	62	100.00%	63,190	100.00%

All NC	SCA Average of Facilities	# Rooms	% of Total	# Cases	% of Total
	ORs	6.7	75.81%	7,173	79.46%
	GI Endoscopy Procedure Rooms	0.7	8.06%	183	2.03%
	Procedure Rooms / Non-surgical	1.4	16.13%	1,671	18.51%
	Totals OR, GI Endo and Proc Rooms	8.9	100.00%	9,027	100.00%

Proposed Project	WASC Project Year 2	# Rooms	% of Total	# Cases	% of Total
	OR	1	14.29%	1,337	9.78%
	GI Rooms	3	42.86%	4,915	35.96%
	Procedure Rooms / Non-surgical	3	42.86%	7,416	54.26%
	Totals OR, GI Endo and Proc Rooms	7	100.00%	13,668	100.00%