## TOWN OF SOUTHERN SHORES <br> TOWN COUNCIL REGULAR MEETING

5375 N. Virginia Dare Trail, Southern Shores, NC 27949
Phone 252-261-2394 / Fax 252-255-0876
www.southernshores-nc.gov
PITTS CENTER
Tuesday, September 07, 2021 at 5:30 PM

## MINUTES

## Call Meeting to Order

Pledge of Allegiance
Moment of Silence

## Present

Mayor pro tem Elizabeth Morey Council Member Jim Conners Council Member Leo Holland Council Member Matt Neal

## Absent

Mayor Tom Bennett

## Amendments to / Approval of Agenda

Town Manager Ogburn requested Council remove and table Resolution 2021-09-02 Resolution Opposing US Fish and Wildlife Service's Proposed Designation of Critical Habitat for the Rufa Red Knot from the consent agenda.

## Consent Agenda

1. Minutes- May 4, 2021 \& August 3, 2021
2. Consideration of Resolution opposing US Fish \& Wildlife Service's proposed designation of critical habitat for the Rufa Red Knot
3. Resolution 2021-09-03 Awarding Badge and Service Weapon -Police Sergeant George M. Farrow. NCGS 20-187.2

Motion made by Council Member Holland to remove item \#2 from the consent agenda (Resolution Rufa Red Knot) and approve items \#1 and \#3 on the consent agenda, Seconded by Council Member Conners. Motion passed unanimously (4-0).

Voting Yea: Mayor pro tem Morey, Council Member Conners, Council Member Holland, Council Member Neal

Council approved the agenda as amended by Consensus.

## Presentations

4. Service Award- 20 Years of Service, Deputy Chief Jonathan Slegel

Police Chief David Kole recognized Deputy Chief Slegel for his 20 years of service.

## Staff Reports

Deputy Town Manager/Planning Director Wes Haskett presented his department's monthly report for August. He announced the Southern Shores Planning Board will hold a Special Meeting on September 14, 2021 at 5:30 p.m. in the Pitts Center. The purpose of the special meeting is for the board to participate in an online UNC School of Government legislative zoning decisions workshop. The Planning Board will hold a regular meeting on September $20^{\text {th }}$ at 5:00 p.m.

Police Chief David Kole presented his department's monthly report for August.
Fire Chief Limbacher presented his department's monthly report for August.
Town Manager Ogburn provided a summary of the following operational highlights:

- Beach Nourishment Update- On September 2, 2021 Dare County received 3 bids from dredge contractors in response to its solicitation for bids for the Town of Duck, Town of Southern Shores, Town of Kitty Hawk, and the Town of Kill Devil Hills beach nourishment projects. Weeks Marine, Inc. submitted the low bid based on the Base Bid and the Additive Bid, which totaled \$27,932,500 for all four projects. There are still several steps to take with obtaining permits. The town rate is in line with this budget. Town Manager Ogburn will be seeking easements for 12 parcels in the Town of Duck included in the northern tapper once he presents the easements to Council for approval.
- Traffic-Town Manager Ogburn recommends citizens send letters or emails to Congressman Greg Murphy in hopes of getting more attention to the MidCurrituck Bridge. Summer traffic numbers do seem to show that the no left turn barricades had some merit. He also recommended meeting with the Town of Duck in the near future.
- Tax Bills-Town Manager Ogburn provided a detailed explanation of how beach nourishment will be displayed on a resident's tax bill. Beach nourishment is taxed on real estate and vehicle tax.
- The electric vehicle charger which was installed August $19^{\text {th }}$ and has been used five times so far.
- The October meeting should include the SEPI plan with possible construction costs. He would also like to discuss Police salaries; salaries have fallen behind and it has had an impact. Even though a study was done and implemented, a year later police salaries are about $\$ 4,000$ behind the starting salary of other jurisdictions.
- Town Manager Ogburn requested Council consider moving the Wednesday, November 3, 2021 Council meeting to the following Tuesday, November 9th at 5:30 PM. The manager and two Council Members will be attendees at the NCBIWA conference which conflicts with the original council meeting date.

Motion made by Council Member Conners to reschedule the November 3, 2021 regular Council meeting for Tuesday, November 9, 2021 at 5:30 PM, Seconded by Council Member Neal. The motion passed unanimously (4-0).

Voting Yea: Mayor pro tem Morey, Council Member Conners, Council Member Holland, Council Member Neal

## General Public Comment (Limit: 3 minutes per speaker.)

Public Comment-Ed Kuszmar-174 Duck Rd-would like Council to consider installing a sidewalk along the east side of NC12 in front of his property, it is a safety issue.

Public Comment-Vince Ferretti-296 Wax Myrtle Trail-commends Council for transparency of the beach nourishment taxes but does see a problem with vehicles being taxed for beach nourishment. Vehicles do not go up in value like property does, vehicles depreciate. NCGS needs to be changed when it comes to beach nourishment and should not apply to vehicles.

Public Comment-Andy Ward- 147 Bayberry Trail- The Planning Board will be taking up the temporary sign ordinance. He encouraged election candidates to follow the temporary sign rules.

## Old Business

None

## New Business

5. Public Hearing- SPA-21-01, a Site Plan Amendment application submitted by Aston Properties to amend the site plan for the Marketplace Shopping Center

Town Attorney Gallop opened the public hearing.
Deputy Town Manager/Planning Director Wes Haskett presented the staff report, which read as, the applicant seeks an amendment to the site plan for the Marketplace shopping center by demolishing a portion of one building and construction of a new $24,000 \mathrm{sq}$. ft . Marshalls, a new $6,000 \mathrm{sq}$. ft . retail space for a business to be determined, and parking lot modifications. The proposed parking lot modifications include the use of permeable pavers in order to be eligible for a maximum lot coverage of $67 \%$ instead of $60 \%$. Currently, the proposed lot coverage is $67.1 \%$. As of September 1, 2021, we have not received enough documentation to determine the permeability of the proposed pavers which could affect the square footage of permeable pavers required.

The proposed signage for Marshalls includes three wall signs, one under canopy sign, and one name plate on the freestanding sign which are in compliance with the Town's sign requirements. There are 150 proposed parking spaces with 102 of them being permeable and a total of 613 parking spaces for the site which are in compliance with the Town's parking requirements. A lighting plan and required documentation have also been provided that demonstrate compliance with the Town's outdoor lighting requirements.

The Land Use Plan identifies this area as Commercial in the C , General Commercial zoning district which is consistent with the improvements proposed in the application. All applicable regulations of the Town Zoning Ordinance and all of Town Staff's concerns that are applicable to this application have been identified or are addressed in the recommended conditions. Town Staff recommends conditional approval of the application and the Town Planning Board unanimously
(5-0) recommended conditional approval of the application at the August 16, 2021 Planning Board meeting. Both recommend the following conditions:

1. The following approvals shall be issued prior to submittal of a Building Permit application:
a. Soil Erosion Sedimentation Control Plan Permit for land disturbance over 1 acre as issued by the NCDEQ;
b. Stormwater Management Permit as issued by the NCDEQ;
c. Wastewater approval by the Dare County Health Dept. (tentative approval received from the Dare County Health Dept. and the N.C. Dept. of Health and Human Services).
d. Review and approval of potable water distribution system modifications or extensions by the Dare County Water Dept. (tentative approval received).
2. Lot coverage shall be reduced to not exceed $67 \%$ prior to submittal of a Building Permit application.
3. Documentation showing the proposed permeable paver product and its permeability shall be submitted prior to submittal of a Building Permit application.
4. The applicant must strictly abide by all requirements of the Town Code and must also strictly comply with all other applicable local, State, and Federal requirements.
5. Prior to issuance of a Building Permit, the Town Engineer and the applicant's representative shall evaluate the existing stormwater system for glaring deficiencies and address them.

Councilman Neal asked how "glaring conditions" are determined in condition \#5. Town Engineer Joe Anlauf stated condition number 5 is to basically make sure there is no failure.
Councilman Conners asked the Town Engineer what he thought the state would say about the storm water system being built so many years ago. Mr. Anlauf stated it would probably be eligible for an exemption and that the storm water system appears to be in good shape and most likely there will be no need for drastic re-work.
Councilman Holland asked Karen Partee from Aston Properties how flexible Marshalls was about the trees in the front? Ms. Partee stated Marshalls was not flexible in that area at all. There is no visibility to the stores.
Town Attorney Gallop called for comment and the following citizens provided comment:
Public Comment-Brian Hedrick-17 Palmetto Dr-concerned with the noise and construction debris. Was hoping for better noise abatement than a fence. Concerned with dumpsters being serviced so early in the morning.
Public Comment-Ann Sjoerdsma-232 N Dogwood Trl-The Planning Board was very thorough, and she is hesitant to say anything. Not consistent with the Land Use Plan Vision Statement of 2008; community served by small commercial district. Opposed to the removal of the grove in the parking lot, 6000 square foot store with no tenant, the land use goals and policies of 2008 stated no big box retailers.
Public Comment-Karen Partee, Aston Properties-we will abide by all requirements and construction requirements. She will talk to the property manager about the servicing of the dumpsters in the early morning. Marshalls is a Jr. box, not a big box store. This will be an opportunity to revitalize the Marketplace Shopping Center, a turning point. The tree removal is not a parking space issue, it is a visibility issue. Tenants need to be visible, and signage
needs to be visible. CVS's lease is coming up for renewal and Aston properties is hoping to keep them as a tenant. Would hope the Council will join in helping revitalize the commercial community.

Public Comment-Lilias Morrison-43 Fairway Drive- remember that the Daniels Department Store used to be in the Marketplace. She remembers it being larger than the proposed Marshalls. There was also a Cinema and two upscale restaurants, and a dress shop. There was not enough business to keep the restaurants going. The impact of Marshalls will be beneficial. She hates to see the trees go but understands the visibility. The Town will be better once again.

Public Comment-Patricia (Trisha) Farinholt, 69 Ocean Blvd.-you cannot see all the stores in Duck, yet they are busy. Council has the ability to change the terms.

Hearing no other comments, Town Attorney Gallop closed the public hearing and called on Council for their consideration.

Councilman Conners stated the big box store comment was interesting, as Food Lion is that large. The trees that are being removed are sweetgums and pines and will be replaced with other trees in other areas. There is essentially no "local" business in the Marketplace now, as it is made up of a Starbucks, Jersey Mikes, Verizon, CVS, Dollar Store and Food Lion. He stated he is in favor of approving the site plan with the proposed Planning Board conditions.
Councilman Neal asked Planning Director Haskett if Council had any jurisdiction on the building itself, esthetics. Mr. Haskett stated the Town did not. Councilman Neal stated he had no questions.

Councilman Holland stated he likes his trees but understands that Marshalls is not flexible in that area. We need a viable commercial area. The Marketplace is on life support, and we do not want it to look like the current empty Kmart.

Mayor pro tem Morey thanked Lilias Morrison for the reminder of previous establishments in the Marketplace. The Marketplace has really struggled and in general we are getting something the Town needs.

Motion made by Council Member Conners to approve SPA-21-01 as submitted with conditions 1-5 as recommended by the Planning Board, Seconded by Council Member Holland. The motion passed unanimously (4-0).

Voting Yea: Mayor pro tem Morey, Council Member Conners, Council Member Holland, Council Member Neal

Mayor pro tem Morey called for a short recess at 6:54 p.m. Council reconvened at 7:03 p.m.
6. Financial Advisory Agreement and Budget Amendment \#11

Town Manager Ogburn addressed agenda items \#6 and \#7 simultaneously.
The Financial Advisory Agreement details the services provided by DEC Associates, INC for financial closing of the Town's Beach Nourishment/Shoreline Protection project. Prior to this agreement,
the Town previously contracted with DEC Associates for planning purposes. The amount of the financial agreement is $\$ 30,000$ plus an additional $\$ 2500$ for incidentals.

Town Manager Ogburn stated budget amendment \#11 covers the financial agreement plus incidentals, and an additional $\$ 12,500$ for Local Government Commission Fees, for a total of $\$ 45,000$.
Motion made by Mayor pro tem Morey to approve the Financial Advisory Agreement with DEC Associates, Seconded by Council Member Conners. The motion passed unanimously (4-0).

Voting Yea: Mayor pro tem Morey, Council Member Conners, Council Member Holland, Council Member Neal

Motion made by Council Member Holland to approve the associated budget amendment \#11, Seconded by Councilman Conners. The motion passed unanimously (4-0).
Voting Yea: Mayor pro tem Morey, Council Member Conners, Council Member Holland, Council Member Neal
7. Southern Shores Beach Nourishment Projects - Initial Resolution \#2021-09-01 Directing the Application to the Local Government Commission for Approval of a Special Obligation Bond; Requesting Local Government Commission Approval of The Town's Special Obligation Bond; and certain related matters

State law G.S. 120-157.1-157.4 adopted and effective on June 24, 2011 requires that certain capital projects to be financed with debt in an amount exceeding $\$ 1,000,000$ be reported to the Joint Legislative Committee on Local Government and to the Fiscal Research Division of the North Carolina General Assembly.

Resolution 2021-09-01 required a "findings" resolution directing the application for 2021 Special Obligation Bonds to the Local Government Commission for approval.
Motion made by Council Member Conners to approve Resolution 2021-09-01, Seconded by Mayor pro tem Morey. The motion passed unanimously (4-0).
Voting Yea: Mayor pro tem Morey, Council Member Conners, Council Member Holland, Council Member Neal
8. Consideration of Dare County Tourism Impact Grant

Town Manager Ogburn provided a summary which stated staff is requesting authorization to apply to the Dare County Tourism Board for a Tourism Impact Grant. The grant request would be for funding to secure traffic data that will be instrumental in helping the Town better evaluate and understand the impacts that tourism related traffic generates. Further funding may be requested to purchase equipment used to mitigate the impacts of tourism generated traffic. The town has contracted in previous summers to place signage and barricades along US 158 at South Dogwood to prohibit left hand turns on to South Dogwood. The grant request would be in an amount not to exceed $\$ 50,000$ and requires no match. The information collected is likely useful on a county wide level.

Companies such as Streelight Data, collect location records from smart phones and navigation devices in connected cars and trucks. Data is derived from navigation-GPS data and LocationBased Services (LBS) data. Adding context from numerous other sources like parcel data and digital road network data, they can develop a view into traffic patterns in Southern Shores as well as all of Dare County.

This data can help to better understand where the traffic that cuts through the residential streets of Southern Shores originates from including from within the county or out. We can determine the volume of traffic that uses Southern Shores as a cut through by either turning off US 158 or NC 12 , and where it exits the residential streets including the turning movements in general. This information would be on a platform that we can access and analyze data to see the routes taken to and through the Town.
Mayor pro tem Morey stated perhaps this will provide some resources to deal with the impact of tourism.

Councilman Holland stated the traffic counts numbers have been shared with the Tourism Board.
Motion made by Council Member Neal to authorize the Town Manager to apply for a DCTB Tourism Impact Grant, Seconded by Council Member Holland. The motion passed unanimously (4$0)$.

Voting Yea: Mayor pro tem Morey, Council Member Conners, Council Member Holland, Council Member Neal
9. Consideration of FEMA Building Resilient Infrastructure and Communities (BRIC) Grant and Budget Amendment

The Building Resilient Infrastructure and Communities (BRIC) Program, is funded by FEMA and administered through a partnership with the North Carolina Division of Emergency Management (NCEM). NCEM has the authority and responsibility for developing and maintaining a State Standard Hazard Mitigation Plan, reviewing the Building Resilient Infrastructure and Communities Program sub-applications, recommending technically feasible and cost-effective sub-applications to FEMA and providing pass-thru funding for FEMA-approved and awarded project grants to eligible sub-applicants. Letters of Interest are due no later than October 1, 2021 at 5:00 pm.

The proposed project areas are included in the NC 12 Drainage Study completed by VHB Engineering in cooperation with the Town of Duck, and NCDOT, to address potential solutions to flooding throughout the roadway corridor. Staff submitted a Letter of Interest for funding in 2020 for the identified solution at the Sea Oats project and was invited to submit a full application for FEMA's consideration. However, staff was unable to pull together the required documentation and meet the pre-application planning requirements in time to submit a full application. Attached is a contract provided by VHB Engineering NC, P.C. for grant application assistance to better position the town to submit a full and competitive application. The application will require predesign level of refinement of the initial concepts included in the 2006 report in order to develop construction cost estimates, address potential right-of-way impacts, address grading and drainage issues, and confirm environmental compliance and permitting requirements. However, the preliminary engineering, final design, construction documents, environmental compliance
documents and permitting of the drainage projects will be accomplished under a separate contract pending the actual grant award.

The NC12 corridor in Southern Shores has inadequate drainage or stormwater infrastructure in place to provide conveyance of roadway drainage to adequate receiving systems. Instead, the sandy soils within the corridor provide for infiltration of stormwater runoff from the roadway and contributing runoff from public side streets. The roadway floods frequently from storm events of various intensities due to the lack of drainage infrastructure and periods of saturated soils. This situation caused extensive flooding in the lowest areas along the corridor, negatively impacting residents, tourists, and emergency personnel. Although an extreme, this was indicative of substandard drainage conditions, and helped reinforce the need for improvements along NC12, thereby leading to this request.

Councilman Neal asked the Town Manager if American Rescue Plan Act Funds (ARP) could be used towards the grant. Town Manager Ogburn stated it could not.
Mayor pro tem Morey inquired if there was a state fund for BRIC. Town Manager Ogburn replied yes.

Motion made by Council Member Neal to approve the Budget Amendment \#12 and authorize the Town Manager to sign the grant application contract with VHB Engineering NC, Seconded by Mayor pro tem Morey. The motion passed unanimously (4-0).

Voting Yea: Mayor pro tem Morey, Council Member Conners, Council Member Holland, Council Member Neal

## General Public Comment

None

## Council Business

Councilman Holland provided the monthly Tourism Board report. Occupancy for the month of June was up $24 \%, 103 \%$ year to date. Meals were up $37 \%, 88 \%$ year to date.

Councilman Neal thanked Police Sergeant George Farrow for his 25 plus years of service and asked Chief Kole if Sgt. Farrow would be in attendance before his official retirement, so that Council could formally thank him and wish him well in his retirement. Police Chief David Kole stated Sergeant Farrow will be in attendance at a future meeting.

Councilman Conners provided an update on the Monarch Flyway, stating planting will start in late October. He also stated the Government Access Committee will be meeting soon for their regular meeting and the Room at the Inn homeless shelter program recently provided mental health training and resources.

Mayor pro tem Morey thanked the residents for attending and asked everyone to please remain vigilant with virus mitigation efforts.

## Adjourn

Hearing no further business, Motion made by Council Member Holland to adjourn the meeting at 7:36 p.m., Seconded by Council Member Conners. The motion passed unanimously.

Voting Yea: Mayor pro tem Corey, Council Member Conners, Council Member Holland, Council Member Neal

## ATTEST:

Thana Se Emmet
Thomas G. Bennett, Mayor


# TOWN OF SOUTHERN SHORES, NORTH CAROLINA 

## MEMORANDUM

TO: Mayor Bennett and Members of the Town Council
FROM: Cliff Ogburn, Town Manager

SUBJECT: Police Sergeant Retirement Resolution - Awarding Badge \& Gun (Resolution \#2021-09-03)

DATE: $\quad$ Sept. 7, 2021

Attached please find a resolution awarding badge and service weapon to Police Sergeant George M. Farrow. NCGS 20-187.2 authorizes municipal governing bodies, at their discretion, to award to a retiring law enforcement officer the badge and service sidearm carried during his service with the local government. The statute requires the governing body to determine a price for the service sidearm and further requires that the retiring officer obtain the appropriate permit in accordance with the NCGS 14-402. The resolution recognizes Sergeant Farrow for his dedication to duty and his service to the Town of Southern Shores. Also, the resolution requests the value of the service sidearm be established at $\$ 1$ and authorizes the Town Manager to transfer to Sergeant F arrow the service sidearm carried and a retired badge similar to the badge worn during his service with the Southern Shores Police Department.

## TOWN OF SOUTHERN SHORES, NORTH CAROLINA <br> RESOLUTION \#2021-09-03

## RESOLUTION HONORING POLICE SERGEANT GEORGEM. FARROW FOR 25+ YEARS OF SERVICE \& AWARDING HIM HIS RETIRED BADGE AND SERVICE SIDEARM

WHEREAS, George M. Farrow joined the Town of Southern Shores Police Department on October 22, 2012 and held the ranks of Patrolman and Sergeant; and

WHEREAS, Sergeant Farrow's service and dedication to the Southern Shores Police Department and accomplishments in the field of law enforcement are hereby recognized and commended; and

WHEREAS, G.S. 20-187.2 provides that retiring members of municipal law enforcement agencies may receive, at the time of their retirement, the badge or a retired badge similar to the badge worn or carried by them during their service with the municipality; and

WHEREAS, G.S. 20-187.2 further provides that the governing body of the municipal law enforcement agency may, in its discretion, award to a retiring member the service sidearm of such retiring member at a price determined by the governing body, upon securing a permit as required by NCGS 14-402 et seq; and

WHEREAS, George M. Farrow has served for over twenty-five total years in law enforcement and nine of those years as a member of the Southern Shores Police Department and is retiring from the Southern Shores Police Department on September 30, 2021; and

WHEREAS, the Town Council members of the Town of Southern Shores hereby determines One and No/100 Dollars (\$1.00) to be the value of the service sidearm carried by George M. Farrow, a Glock 45 caliber, Model 21, serial number WTK448.

NOW, THEREFORE, BE IT RESOLVED by the Town Council of the Town of Southern Shores, North Carolina as follows:

1. The Town Manager is hereby authorized in accordance with the provisions of G.S. 20-187.2 to transfer to George M. Farrow a retired badge similar the badge worn by him during his service with the Southern Shores Police Department; and
2. The Town Manager is hereby authorized in accordance with the Provisions of G.S. 20-187.2 to transfer to George M. Farrow his service sidearm for and in consideration of the sum of One and No/100 Dollars (\$1.00) received from George M. Farrow and upon his securing a permit as required by NCGS 14-402.

BE IT FURTHER RESOLVED that the Town Council of the Town of Southern Shores do hereby extend their best wishes to Sergeant George M. Farrow and his family for a long, happy and healthy retirement.

This Resolution adopted this $7^{\text {th }}$ day of September 2021.

Tom Bennett, Mayor
Town of Southern Shores

## ATTEST:

Sheila Kane, Town Clerk

## STAFF REPORT

| To: | Southern Shores Town Council |
| :--- | :--- |
| Date: | September 7, 2021 |
| Case: | SPA-21-01 |
| Prepared By: | Wes Haskett, Deputy Town Manager/Planning Director |
|  |  |
| GENERAL INFORMATION |  |

## Requested Action: Site Plan Amendment application submitted by Aston Properties to amend

 the site plan for the Marketplace shopping center.PIN \#: 986720717057
Location: 5500 N. Croatan Hwy.
Zoning: C, General Commercial District
Existing Land Use: "Commercial"
Surrounding Land Use \& Zoning:
North-Residential; RS-1, Single-Family Residential District
South- Highway 158, Town of Kitty Hawk
East- Commercial; C, General Commercial District
West- Commercial; C, General Commercial District
Physical Characteristics: Developed (existing Group Development)
$\begin{array}{ll}\text { Applicable Regulations: } & \begin{array}{l}\text { Town Zoning Ordinance: Article III, } \underline{\text { Interpretation and Definition }} \\ \text { of Terms; Article IV, Application of Regulations; Article VI, }\end{array} \\ & \begin{array}{l}\text { General Provisions; Article VII, Schedule of District Regulations; }\end{array} \\ \text { Article X, Administration and Enforcement. }\end{array}$

## ANALYSIS

The applicant seeks an amendment to the site plan for the Marketplace shopping center by demolishing a portion of one building and construction of a new $24,000 \mathrm{sq}$. ft. Marshalls, a new $6,000 \mathrm{sq}$. ft. retail space for a business to be determined, and parking lot modifications. The proposed parking lot modifications include the use of permeable pavers in order to be eligible for a maximum lot coverage of $67 \%$ instead of $60 \%$. Currently, the proposed lot coverage is $67.1 \%$. As of September 1, 2021, we have not received enough documentation to determine the permeability of the proposed pavers which could affect the square footage of permeable pavers required.

The proposed signage for Marshalls includes three wall signs, one under canopy sign, and one name plate on the freestanding sign which are in compliance with the Town's sign requirements. There are 150 proposed parking spaces with 102 of them being permeable and a total of 613 parking spaces for the site which are in compliance with the Town's parking requirements. A lighting plan and required documentation have also been provided that demonstrate compliance with the Town's outdoor lighting requirements.

## RECOMMENDATION

The Land Use Plan identifies this area as Commercial in the C, General Commercial zoning district which is consistent with the improvements proposed in the application. All applicable regulations of the Town Zoning Ordinance and all of Town Staff's concerns that are applicable to this application have been identified or are addressed in the recommended conditions. Town Staff recommends conditional approval of the application and the Town Planning Board unanimously (5-0) recommended conditional approval of the application at the August 16, 2021 Planning Board meeting. Both recommend the following conditions:

1. The following approvals shall be issued prior to submittal of a Building Permit application:
a. Soil Erosion Sedimentation Control Plan Permit for land disturbance over 1 acre as issued by the NCDEQ;
b. Stormwater Management Permit as issued by the NCDEQ;
c. Wastewater approval by the Dare County Health Dept. (tentative approval received from the Dare County Health Dept. and the N.C. Dept. of Health and Human Services).
d. Review and approval of potable water distribution system modifications or extensions by the Dare County Water Dept. (tentative approval received).
2. Lot coverage shall be reduced to not exceed $67 \%$ prior to submittal of a Building Permit application.
3. Documentation showing the proposed permeable paver product and its permeability shall be submitted prior to submittal of a Building Permit application.
4. The applicant must strictly abide by all requirements of the Town Code and must also strictly comply with all other applicable local, State, and Federal requirements.
5. Prior to issuance of a Building Permit, the Town Engineer and the applicant's representative shall evaluate the existing stormwater system for glaring deficiencies and address them.

August 9, 2021

Mr. Wes Haskett, Planning Director
Town of Southern Shores
5375 N. Virginia Dare Trail,
Southern Shores, NC 27949
RE: Modification to The Marketplace
At Southern Shores
Timmons Project No. 44588
Dear Wes:
Please accept the following submittal for Planning Board Review:

1. 12 copies of Civil Site Plan Design
2. 12 copies of the building rendering with signage calculations.
3. 12 copies of the lighting plans with supporting lighting cut sheets.
4. A copy of the willingness serve letter from Dare County Water which also states approval for the reduction of cover from 36 inches to 30 inches.

The revised plans have incorporated responses to comments that have been made by you and Mr. Joe Anlauf.

1. We have now provided the require pervious pavement in excess of the minimum required per your calculation. The product proposed is permeable pavers.
2. I have added to the landscape plan and indicated that the area of development does contain more than $15 \%$ open space. I would like to further discuss with you the comment regarding a landscape buffer and whether that is applicable for this design.
3. We have corrected the grading labels and have added a few existing spot grades to help illustrate how the rear portion of the site will drain.
4. We have added information on the area of disturbance which is substantially larger than previous due to the removal of pavement for installation of the pervious pavers. We will be filing for erosion control and stormwater permits once the scope of development work is approved by the Town.
5. The waterline changes will require permitting through NCDEQ - Public Water Supply. We are working with Dare County to insure compliance with their specifications.
6. We have added a "connection to sewer manhole" detail.
7. The water pumped from the well point systems for dewatering for waterline installation will be routed through a sediment bag that will be allowed to discharge on the existing pavement. This water should not contain sediment; however, gutter protection is provided at each flume that discharges from that area.

At the time of publishing our plans and documents for this submittal, we did not yet have the letter requested from the health department documenting that the septic system is sufficient for this modification to the shopping center. We are hoping that the engineers working on that portion of the project will be able to obtain the letter in time for this project to be able to move forward as anticipated.

We will continue to review our plans and make additional changes as necessary. If you have any questions or require any additional information, please do not hesitate to contact me at (252) 621-5029.

Sincerely,
Timmons Group


Kimberly D. Hamby, PE
Sr. Project Manager
cc: file
L. Karen Partee, Aston Properties

## THE MARKETPLACE AT SOUTHERN SHORES

SITE PLAN

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AUGUST 9, 2021

SITE LOCATION





CIVIL ENGINEER

| , ELIZABETH CITY, NC 2790 KIMBERLY HAMBY, PE (252) 621-5029 |
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## CONSTRUCTION SEQUENCING



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## PERMANENT SEEDING SCHEDULE FOR COASTAL PLAIN

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HORSESHOE INLET PROTECTION





REDEVELOPMENT OF:
MARKETPLACE AT
SOUTHERN SHORES
5531-5597 N CROATAN HWY
SOUTHERN SHORES NC 27949

REDEVELOPED BY:
ASTON
610 E MOREHEAD ST STE 100
CHARLOTTE NC 28202

## EXHIBIT FOR MARKETPLACE AT SOUTHERN SHORES <br> PROPOSED LOCATION OF FIRE DEPARTMENT CONNECTION AUGUST 16,02021

SMH 2
TOP 6.27
INV IN 1.28 INV OUT 1.28

PROPOSED FIRE
DEPARTMENT
CONNECTION
LOCATION

PROPOSED
SINGLE STORY
BLOCK BUILDING
6,000 SF
FFE 8.60

# County Of Dare <br> Kill Devil Hills, North Carolina 27948 



600 Mustian St.<br>Phone: (252) 475-5603<br>Fax: (252) 441-2239<br>E-mail: pat.irwin@darenc.com

August 6, 2021
Kimberly Hamby, PE
Timmons Group

## Marketplace at Southern Shores Water Line Project:

This letter serves as Dare County Water's willingness to serve the water line extension in the Marketplace at Southern Shores and approval of a 30" cover for this water line.

Sincerely:

## Patrick Inwin

Patrick Irwin, Utilities Director


## RE: [External] Market Place- SS; Change of use request

mstrader@quible.com
RE: [External] Market Place- SS; Change of use request

| Received: | Aug 13, 2021 5:19 PM |
| :--- | :--- |
| Expires: | Oct 12, 2021 5:19 PM |
| From: | steven.berkowitz@dhhs.nc.gov |
| To: | joshc@darenc.com |
| Cc: | mstrader@quible.com, tim.crissman@dhhs.nc.gov |
| Subject: | RE: [External] Market Place- SS; Change of use request |
| Attachments: | image001.png |

## This message was sent securely using Zix

Josh: As we just discussed by phone, we do not object to the proposed Change of Use to allow for the construction of the Michael's Retail store in The Market Place in Southern Shores. Conditions to incorporate should be:

1. Use of low-flow fixtures (compliant with EPA WaterSense capacities, including urinals which use now more than 0.5 gallons per flush, water closets which use not more than 1.28 gallons/flush and faucets that use no more than 1.5 gallons per minute.) This would apply to any new construction (e.g., Marshall's) or relocations (e.g., Coastal Rehabilitation).
2. Any proposed new food service facilities would require separate approval on a case-by-case basis to confirm capacity of the system to handle estimate flow, assessment of impact on wastewater strength, and ability to tie into an existing or newly-proposed grease trap.

Please feel free to contact us if you have any questions about this response, or if we can assist further with this project.
Steven

Steven Berkowitz, PE
Senior Engineer
Division of Public Health, On-Site Water Protection Branch
North Carolina Department of Health and Human Services

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From: Josh Coltrain [joshc@darenc.com](mailto:joshc@darenc.com)
Sent: Thursday, August 12, 2021 4:57 PM
To: Berkowitz, Steven [steven.berkowitz@dhhs.nc.gov](mailto:steven.berkowitz@dhhs.nc.gov)

Cc: Michael Strader [MStrader@quible.com](mailto:MStrader@quible.com) Subject: [External] Market Place- SS; Change of use request

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## This message was sent securely using Zix ${ }^{\circledR}$

Good afternoon Steven,
Attached is a change of use request for Market Place in Southern Shores with supporting flow data for additional retail space. Please review as soon as possible and provide feedback/approval. The town needs an answer as soon as possible before the planning department can grant approval.

Sincerely,

Josh Coltrain, REHS
Environmental Health Supervisor
Department of Health \& Human Services
Public Health Division
P.O. Box 669, Manteo, NC 27954
252.475. 5014 phone
252.441.6921 _fax
www.darenc.com
E

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This message was secured by $\mathbf{Z i x}^{\circledR}$

OSQ ${ }^{\text {TM }}$ High Output LED Area/Flood Luminaire featuring Cree TrueWhite ${ }^{\circledR}$ Technology

## Product Description

The OSQ ${ }^{\text {TM }}$ High Output Area/Flood luminaire blends extreme optical control, advanced thermal management and modern, clean aesthetics. Built to last, the housing is rugged cast aluminum with an integral, weathertight LED driver compartment. Versatile mounting configurations offer simple installation. Its slim, low-profile design minimizes wind load requirements and blends seamlessly into the site providing even, quality illumination. The OSQ high output luminaire is a suitable upgrade for HID applications with one or even multiple 1000 Watt luminaires.
Applications: Auto dealerships, parking lots, campuses, facade lighting, high-mast and general site lighting applications

## Performance Summary

Utilizes Cree TrueWhite ${ }^{\oplus}$ Technology on 5000K Luminaires
NanoOptic ${ }^{\oplus}$ Precision Delivery Grid ${ }^{\text {TM }}$ optic
Assembled in the U.S.A. of U.S. and imported parts
Initial Delivered Lumens: Up to 68,691
Efficacy: Up to 125 LPW
CRI: Minimum 70 CRI (3000K, 4000K \& 5700K); 90 CRI (5000K)
CCT: $3000 \mathrm{~K}(+/-300 \mathrm{~K}), 4000 \mathrm{~K}$ (+/- 300K), 5000 K (+/- 300K), 5700 K (+/- 500K)
Limited Warranty ${ }^{\dagger}$ : 10 years on luminaire; 10 years on Colorfast DeltaGuard ${ }^{\circledR}$ finish; up to 5 years for Synapse ${ }^{\circledR}$ accessories; 1 year on luminaire accessories
${ }^{+}$See http://creelighting.com/warranty for warranty terms. For Synapse accessories, consult Synapse spec sheets for details on warranty terms.


| Lumen <br> Package | Voltage | Weight |
| :--- | :--- | :--- |
| $40 / 50 \mathrm{~L}$ | $120-480 \mathrm{~V}$ | $70.0 \mathrm{lbs} .(31.8 \mathrm{~kg})$ |
| 65 L | $120-480 \mathrm{~V}$ | $72.0 \mathrm{lbs} .(32.7 \mathrm{~kg})$ |

## Ordering Information

Fully assembled luminaire is composed of two components that must be ordered separately:
Example: Mount: OSQ-HO-AA-SV + Luminaire: OSQ-HO-A-NM-2ME-4OL-4OK-UL-SV

| Mount (Luminaire must be ordered separately) |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| OSQ-HO- |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Luminaire (Mount must be ordered separately) |  |  |  |  |  |  |  |  |  |  |
| OSQ-HO | A | NM |  |  |  |  |  |  |  |  |
| Product | Version | Mounting | Optic | Lumen Package** | CCT | Voltage | Color Options | Options |  |  |
| OSQ-HO | A | NM <br> No Mount | Asymmetric |  | 30K <br> 3000K <br> - 70 CRI <br> 40K <br> 4000K <br> - 70 CRI <br> 50K <br> 5000K <br> - 90 CRI <br> 57K <br> 5700K <br> - 70 CRI | UL <br> Universal 120-277V <br> - All lumen packages UH <br> Universal 347-480V <br> - 40L <br> \& 50L <br> lumen <br> packages <br> only <br> UM <br> Universal 208-480V -65L lumen package only | BK <br> Black <br> BZ <br> Bronze <br> SV <br> Silver <br> WH <br> White | PML Programmable Multi-Level, up to $\mathbf{4 0}^{\prime}$ Mounting Height <br> - Refer to PML spec sheet for details <br> - Not available with 65L <br> - Intended for downlight applications at $0^{\circ}$ tilt <br> Q9/Q8/Q7/Q6/Q5/Q4/Q3/Q2/Q1 Field Adjustable <br> Output <br> - Must select Q9, Q8, Q7, Q6, Q5, Q4, Q3, Q2, or Q1 <br> - Not available with 65L when ordered w/R option <br> - Offers full range adjustability <br> - Refer to pages 14-16 for power and lumen values <br> R NEMA -7 -Pin Photocell Receptacle <br> - 7-pin receptacle per ANSI C136.41 <br> - Intended for downlight applications with maximum $45^{\circ}$ tilt <br> - Factory connected 0-10V dim leads <br> - 12" $(305 \mathrm{~mm})$ seven-conductor leads exit luminaire <br> - Requires photocell and shorting cap by others <br> - Not available with 65L when ordered w/Q option | RL <br> RR | Rotate Left <br> - LED and optic are rotated to the left <br> - Refer to RR/RL configuration diagram on page 13 for optic directionality <br> Rotate Right <br> - LED and optic are rotated to the right <br> - Refer to RR/RL configuration diagram on page 13 for optic directionality |

[^0]
## Product Specifications

## CREE TRUEWHITE ${ }^{\oplus}$ TECHNOLOGY

A revolutionary way to generate high-quality white light, Cree TrueWhite ${ }^{\circledR}$ Technology is a patented approach that delivers an exclusive combination of $90+$ CRI, beautiful light characteristics and lifelong color consistency, all while maintaining high luminous efficacy - a true no compromise solution.

## CONSTRUCTION \& MATERIALS

- Slim, low profile design minimizes wind load requirements
- Luminaire housing is rugged die cast aluminum with an integral, weathertight LED driver compartment and high-performance heat sink
- Convenient interlocking mounting method on direct arm mount. Mounting adaptor is rugged die cast aluminum and mounts to $3^{\prime \prime}(76 \mathrm{~mm})$ or larger square or round pole, secured by two 5/16-18 UNC bolts spaced on $2^{\prime \prime}(51 \mathrm{~mm})$ centers
- Adjustable arm that mounts to a horizontal or vertical 2" ( 51 mm ) IP, 2.375-2.50" $(60-64 \mathrm{~mm})$ O.D. steel tenon. Tenon length must be a minimum of 3.75 " ( 95 mm )
- Adjustable arm mount can be adjusted $180^{\circ}$ in $5.0^{\circ}$ increments
- Includes 12 " ( 305 mm ) $18 / 5$ or $16 / 5$ leads exiting the luminaire. When ordered with R option, 12 " ( 305 mm ) 18/7 or $16 / 7$ leads are provided
- Designed for uplight and downlight applications
- Exclusive Colorfast DeltaGuard ${ }^{\circledR}$ finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Silver, bronze, black, and white are available
- Weight: See Dimension and Weight Chart on pages 1 and 13


## ELECTRICAL SYSTEM

- Input Voltage: 120-277V, 208-480V or 347-480V, 50/60Hz, Class 1 drivers
- Power Factor: > 0.9 at full load
- Total Harmonic Distortion: < 20\% at full load
- Integral 10 kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- Consult factory if in-luminaire fusing is required
- Designed with 0-10V dimming capabilities. For 65L SKUs with UL voltage, dimming control lines must be $>1 \mathrm{~V}$ when operated at 277 V . Controls by others
- Refer to Dimming spec sheet for details
- Maximum 10V Source Current: 0.30 mA
- Operating Temperature Range: $-40^{\circ} \mathrm{C}$ to $40^{\circ} \mathrm{C}\left(-40^{\circ} \mathrm{F}\right.$ to $\left.104^{\circ} \mathrm{F}\right)$


## REGULATORY \& VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Consult factory for CE Certified products
- ANSI C136.2 10kV surge protection, tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15, Subpart B, Class A limits for conducted and radiated emissions
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Meets Buy American requirements within ARRA
- RoHS compliant. Consult factory for additional details
- DLC and DLC Premium qualified versions available. Some exceptions apply. Please refer to https://www.designlights.org/search/ for most current information
- OSQ-HO luminaires are enclosure rated IP66 per IEC 60598-1 when ordered without the R option
- Dark Sky Friendly, IDA Approved when ordered with 30K CCT and DA mount only. Please refer to https://www.darksky.org/our-work/lighting/ lighting-for-industry/fsa/fsa-products/ for most current information

CA RESIDENTS WARNING: Cancer and Reproductive Harm -

[^1]
## Product Specifications

## SYNAPSE ${ }^{\oplus}$ SIMPLYSNAP INTELLIGENT CONTROL

The Synapse SimplySNAP platform is a highly intuitive connected lighting solution featuring zone dimming, motion sensing, and daylight harvesting with utility-grade power monitoring and support of up to 1000 nodes per gateway. The system features a reliable and robust self-healing mesh network with a browser-based interface that runs on smartphones, tablets, and PCs. The Twist-Lock Lighting Controller (TL7-B2 and Site Controller (SS450-002) take the OSQ Series to a new performance plateau, providing extreme energy productivity, code compliance and a better light experience.

| Electrical Data* |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Total Current (A) |  |  |  |  |  |
| Package | $\begin{aligned} & \text { Watts } \\ & 120-480 \mathrm{~V} \end{aligned}$ | 120 V | 208 V | 240 V | 277V | 347 V | 480V |
| 40L | 341 | 2.93 | 1.65 | 1.43 | 1.23 | 1.00 | 0.71 |
| 50L | 420 | 3.61 | 2.03 | 1.76 | 1.51 | 1.23 | 0.87 |
| 65L | 550 | 4.73 | 2.66 | 2.30 | 1.98 | 1.59 | 1.15 |

*Electrical data at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual wattage may differ by $+/-10 \%$ when operating between $120-277 \mathrm{~V}$ or $347-480 \mathrm{~V}$ +/- 10\%

| OSQ Series (OSQ-HO) Ambient Adjusted Lumen Maintenance ${ }^{1}$ |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ambient | Optic | Initial LMF | 25 K hr <br> Reported ${ }^{2}$ <br> LMF | 50K hr Reported ${ }^{2}$ LMF | 75 K hr Reported ${ }^{2}$ LMF | 100 K hr Reported ${ }^{2}$ LMF |
| $5^{\circ} \mathrm{C}\left(41^{\circ} \mathrm{F}\right)$ | Asymmetric | 1.04 | 1.03 | 1.01 | 0.99 | 0.97 |
|  | Symmetric | 1.05 | 1.04 | 1.03 | 1.03 | 1.02 |
| $\begin{aligned} & 10^{\circ} \mathrm{C} \\ & \left(50^{\circ} \mathrm{F}\right) \end{aligned}$ | Asymmetric | 1.03 | 1.02 | 1.00 | 0.98 | 0.96 |
|  | Symmetric | 1.04 | 1.03 | 1.02 | 1.01 | 1.00 |
| $\begin{aligned} & 15^{\circ} \mathrm{C} \\ & \left(59^{\circ} \mathrm{F}\right) \end{aligned}$ | Asymmetric | 1.02 | 1.01 | 0.99 | 0.97 | 0.95 |
|  | Symmetric | 1.02 | 1.02 | 1.01 | 1.00 | 0.99 |
| $\begin{aligned} & 20^{\circ} \mathrm{C} \\ & \left(68^{\circ} \mathrm{F}\right) \end{aligned}$ | Asymmetric | 1.01 | 1.00 | 0.98 | 0.96 | 0.94 |
|  | Symmetric | 1.01 | 1.01 | 1.00 | 0.99 | 0.98 |
| $\begin{aligned} & 25^{\circ} \mathrm{C} \\ & \left(77^{\circ} \mathrm{F}\right) \end{aligned}$ | Asymmetric | 1.00 | 0.99 | 0.97 | 0.95 | 0.93 |
|  | Symmetric | 1.00 | 0.99 | 0.98 | 0.98 | 0.97 |

Lumen maintenance values at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$ are calculated per IES TM- 21 based on IES LM- 80 report data for the LED package and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors. Please refer to the Temperature Zone Reference Document for outdoor average nighttime ambient onditions.
In accordance with IES TM-21, Reported values represent interpolated values based on time durations that are up to $6 x$ the tested duration in the IES LM- 80 report for the LED.

## Accessories

| Field-Installed |  |
| :---: | :---: |
| Backlight Shield (One pair) Shorting Cap <br> OSQ-HO-BLSF XA-XSLSHRT <br> - Front facing optics  <br> OSQ-HO-BLSR  <br> - Rotated optics  | Hand-Held Remote <br> XA-SENSREM <br> - For successful implementation of the programmable multi-level option, a minimum of one hand-held remote is required |
| Synapse Wireless Control Accessories |  |
| Twist-Lock Lighting Controller <br> TL7-B2 <br> - Suitable for 120-277V (UL) voltage only <br> - Requires NEMA/ANSI C136.41 7-Pin Dimming Receptacle <br> - Not for use with PML or Q options <br> - Provides On/Off switching, dimming, power metering, digital sensor input, and status monitoring of luminaires <br> - Refer to TL7-B2 spec sheet for details <br> SimplySNAP Central Base Station <br> CBSSW-450-002 <br> - Includes On-Site Controller (SS450-002) and <br> 5-button switch <br> - Indoor and Outdoor rated <br> Synapse Wireless Sensor <br> WSN-DPM <br> -Motion and light sensor <br> -Control multiple zones <br> - Refer to WSN-DPM spec sheet for details | SimplySNAP On-Site Controller <br> SS450-002 <br> - Verizon ${ }^{\oplus}$ LTE-enabled <br> - Designed for indoor applications <br> - Refer to SS450-002 spec sheet for details <br> Building Management System (BMS) Gateway <br> BMS-GW-002 <br> - Required for BACnet integration <br> - Refer to BMS-GW-002 spec sheet for details <br> Outdoor Antennas <br> (Optional, for increased range, 8 dB gain) <br> KIT-ANT420SM <br> - Kit includes antenna, 20' cable and bracket <br> KIT-ANT360 <br> - Kit includes antenna, 30' cable and bracket <br> KIT-ANT600 <br> - Kit includes antenna, $50^{\circ}$ cable and bracket <br> - Refer to Outdoor antenna spec sheet for details |

## Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/ outdoor/area/area-osq-high-output

2ME


CESTL Test Report \#: PL10951-001A OSQ-HO-A-**-2ME-40L-40K-UL Initial Delivered Lumens: 45,012


SQ-HO-A-**-2ME-40L-40K-UL
Mounting Height: 25' (7.6m) A.F.G
Initial Delivered Lumens: 41,880
Initial FC at grade

| Type II Medium Distribution |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lumen Package | 3000K/70 CRI |  | 4000K/70 CRI |  | 5000K/90 CRI |  | 5700K/70 CRI |  |
|  | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings** Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings** Per TM-15-11 |
| 40L | 39,751 | B4 U0 G4 | 41,880 | B4 U0 G5 | 33,920 | B4 U0 G4 | 42,702 | B4 U0 G5 |
| 50L | 48,950 | B4 U0 G5 | 51,571 | B4 U0 G5 | 41,434 | B4 U0 G5 | 52,583 | B4 U0 G5 |
| 65L | 63,945 | B5 U0 G5 | 67,369 | B5 U0 G5 | 53,848 | B4 U0 G5 | 68,691 | B5 U0 G5 |

* Initial delivered lumens at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual production yield may vary between -10 and $+10 \%$ of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt


CESTL Test Report \#: PL10952-001A OSQ-HO-A-**-2ME-4OL-40K-UL w/OSQ-HO-BLSF
Initial Delivered Lumens: 35,53


OSQ-HO-A-**-2ME-40L-4OK-UL
w/OSQ-HO-BLSF
Mounting Height: $25^{\prime}(7.6 \mathrm{~m})$ A.F.G. Initial Delivered Lumens: 33,504 Initial FC at grade

| Type II Medium w/BLS Distribution |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lumen Package | 3000K/70 CRI |  | 4000K/70 CRI |  | 5000K/90 CRI |  | 5700K/70 CRI |  |
|  | Initial Delivered Lumens* | BUG <br> Ratings" Per <br> TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 |
| 40L | 31,801 | B3 U0 G4 | 33,504 | B3 U0 G4 | 27,136 | B3 U0 G4 | 34,162 | B3 U0 G4 |
| 50L | 39,160 | B3 U0 G4 | 41,257 | B3 U0 G5 | 33,147 | B3 U0 G4 | 42,066 | B3 U0 G5 |
| 65L | 51,156 | B3 U0 G5 | 53,895 | B3 U0 G5 | 43,078 | B3 U0 G5 | 54,953 | B3 U0 G5 |

* Initial delivered lumens at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual production yield may vary between -10 and $+10 \%$ of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

OSQ ${ }^{\text {TM }}$ High Output LED Area/Flood Luminaire featuring Cree TrueWhite ${ }^{\circledR}$ Technology

## Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/ outdoor/area/area-osq-high-output

3ME


CESTL Test Report \#: PL10953-001A OSQ-HO-A-**-3ME-4OL-40K-UL Initial Delivered Lumens: 44,770


SQ-HO-A-**-3ME-40L-40K-UL
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 41,880
Initial FC at grade

| Type III Medium Distribution |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3000K/70 CRI |  | 4000K/70 CRI |  | 5000K/90 CRI |  | 5700K/70 CRI |  |
| Lumen Package | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 |
| 40L | 39,751 | B4 U0 G5 | 41,880 | B4 U0 G5 | 33,920 | B4 U0 G4 | 42,702 | B4 U0 G5 |
| 50L | 48,950 | B4 U0 G5 | 51,571 | B4 U0 G5 | 41,434 | B4 U0 G5 | 52,583 | B4 U0 G5 |
| 65L | 63,945 | B4 U0 G5 | 67,369 | B5 U0 G5 | 53,848 | B4 U0 G5 | 68,691 | B5 U0 G5 |

* Initial delivered lumens at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual production yield may vary between -10 and $+10 \%$ of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: $h$ htps://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum. pdf. Valid with no tilt


CESTL Test Report \#: PL10954-001A OSQ-HO-A-**-3ME-4OL-4OK-UL w/OSQ-HO-BLSF
Initial Delivered Lumens: 32,977


OSQ-HO-A-**-3ME-40L-40K-UL
w/OSQ-HO-BLSF
Mounting Height: $25^{\prime}(7.6 \mathrm{~m})$ A.F.G. Initial Delivered Lumens: 34,342
Initial FC at grade

| Type III Medium w/BLS Distribution |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lumen Package | 3000K/70 CRI |  | 4000K/70 CRI |  | 5000K/90 CRI |  | 5700K/70 CRI |  |
|  | Initial Delivered Lumens* | BUG <br> Ratings" Per <br> TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings** Per <br> TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings** Per <br> TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings" Per <br> TM-15-11 |
| 40L | 32,596 | B3 U0 G4 | 34,342 | B3 U0 G5 | 27,814 | B3 U0 G4 | 35,016 | B3 U0 G5 |
| 50L | 40,139 | B3 U0 G5 | 42,288 | B4 U0 G5 | 33,976 | B3 U0 G5 | 43,118 | B4 U0 G5 |
| 65L | 52,435 | B4 U0 G5 | 55,243 | B4 U0 G5 | 44,155 | B4 U0 G5 | 56,327 | B4 U0 G5 |

* Initial delivered lumens at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual production yield may vary between -10 and $+10 \%$ of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt


## Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/ outdoor/area/area-osq-high-output

4ME


CESTL Test Report \#: PL09256-001A OSQ-HO-A-**-4ME-40L-4OK-UL Initial Delivered Lumens: 44,936


OSQ-HO-A-**-4ME-4OL-40K-UL Mounting Height: $25^{\prime}(7.6 \mathrm{~m})$ A.F.G. Initial Delivered Lumens: 41,880 Initial FC at grade

| Type IV Medium Distribution |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3000K/70 CRI |  | 4000K/70 CRI |  | 5000K/90 CRI |  | 5700K/70 CRI |  |
| Lumen Package | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings** Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings** Per TM-15-11 |
| 40L | 39,751 | B4 U0 G4 | 41,880 | B5 U0 G4 | 33,920 | B4 U0 G4 | 42,702 | B5 U0 G4 |
| 50L | 48,950 | B5 U0 G5 | 51,571 | B5 U0 G5 | 41,434 | B4 U0 G4 | 52,583 | B5 U0 G5 |
| 65L | 63,945 | B5 U0 G5 | 67,369 | B5 U0 G5 | 53,848 | B5 U0 G5 | 68,691 | B5 U0 G5 |

* Initial delivered lumens at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual production yield may vary between -10 and $+10 \%$ of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt


CESTL Test Report \#: PL09256-002A OSQ-HO-A-**-4ME-40L-4OK-UL w/OSQ-HO-BLSF
W/OSQ-HO-BLSF


OSQ-HO-A-**-4ME-4OL-4OK-UL
W/OSQ-HO-BLSF
Mounting Height. 25' (7.6m) A F.
Mountial Initial Delivered Lumens: 33,085 Initial FC at grade

| Type IV Medium w/BLS Distribution |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lumen Package | 3000K/70 CRI |  | 4000K/70 CRI |  | 5000K/90 CRI |  | 5700K/70 CRI |  |
|  | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings** Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings** Per TM-15-11 |
| 40L | 31,403 | B3 U0 G4 | 33,085 | B3 U0 G4 | 26,797 | B3 U0 G4 | 33,735 | B3 U0 G4 |
| 50L | 38,671 | B3 U0 G5 | 40,741 | B3 U0 G5 | 32,733 | B3 U0 G4 | 41,541 | B3 U0 G5 |
| 65L | 50,517 | B4 U0 G5 | 53,222 | B4 U0 G5 | 42,540 | B3 U0 G5 | 54,266 | B4 U0 G5 |

* Initial delivered lumens at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual production yield may vary between -10 and $+10 \%$ of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt


## Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/ outdoor/area/area-osq-high-output

AF


CESTL Test Report \#: PL10910-001A OSQ-HO-A-**-AF-40L-40K-UL Initial Delivered Lumens: 44,921


SQ-HO-A-**-AF-40L-40K-UL
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 41,880
Initial FC at grade

| Automotive FrontLineOptic ${ }^{\text {TM }}$ Distribution |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lumen Package | 3000K/70 CRI |  | 4000K/70 CRI |  | 5000K/90 CRI |  | 5700K/70 CRI |  |
|  | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings** Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings** Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 |
| 40L | 39,751 | B4 U0 G3 | 41,880 | B4 U0 G3 | 33,920 | B3 U0 G3 | 42,702 | B4 U0 G3 |
| 50L | 48,950 | B4 U0 G3 | 51,571 | B4 U0 G3 | 41,434 | B4 U0 G3 | 52,583 | B4 U0 G3 |
| 65L | 63,945 | B4 U0 G4 | 67,369 | B4 U0 G4 | 53,848 | B4 U0 G3 | 68,691 | B4 U0 G4 |

Initial delivered lumens at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual production yield may vary between -10 and $+10 \%$ of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt


ESTL Test Report \#: PL10911-001A OSQ-HO-A-**-AF-40L-40K-UL
w/OSQ-HO-BLSF
Initial Delivered Lumens: 35,558


OSQ-HO-A-**-AF-4OL-4OK-UL
w/OSQ-HO-BLSF
Mounting Height: 25' 7.6 m ) A.FG
Initial Delivered Lumens: 33,151
Initial FC at grade

| Automotive FrontLineOptic ${ }^{\text {TM }}$ w/BLS Distribution |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lumen Package | 3000K/70 CRI |  | 4000K/70 CRI |  | 5000K/90 CRI |  | 5700K/70 CRI |  |
|  | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings" Per <br> TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 |
| 40L | 31,466 | B3 U0 G2 | 33,151 | B3 U0 G2 | 26,850 | B3 U0 G2 | 33,802 | B3 U0 G2 |
| 50L | 38,747 | B3 U0 G2 | 40,822 | B3 U0 G3 | 32,798 | B3 U0 G2 | 41,623 | B3 U0 G3 |
| 65L | 50,617 | B4 U0 G3 | 53,327 | B4 U0 G3 | 42,625 | B3 U0 G3 | 54,374 | B4 U0 G3 |

* Initial delivered lumens at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual production yield may vary between -10 and $+10 \%$ of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

OSQ ${ }^{\text {TM }}$ High Output LED Area/Flood Luminaire featuring Cree TrueWhite ${ }^{\circledR}$ Technology

## Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/ outdoor/area/area-osq-high-output

5ME


CESTL Test Report \#: PL09257-001A OSQ-HO-A-**-5ME-40L-40K-UL Initial Delivered Lumens: 35,159


OSQ-HO-A-**-5ME-40L-40K-UL
Mounting Height: $25^{\prime}(7.6 \mathrm{~m})$ A.F.G.
Initial Delivered Lumens: 39,332
Initial FC at grade

| Type V Medium Distribution |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lumen Package | $3000 \mathrm{~K} / 70 \mathrm{CRI}$ |  | 4000K/70 CRI |  | 5000K/90 CRI |  | 5700K/70 CRI |  |
|  | Initial Delivered Lumens* | BUG <br> Ratings** Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings** Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings** Per TM-15-11 |
| 40L | 37,169 | B5 U0 G5 | 39,332 | B5 U0 G5 | 31,689 | B5 U0 G5 | 40,155 | B5 U0 G5 |
| 50L | 45,389 | B5 U0 G5 | 48,031 | B5 U0 G5 | 38,871 | B5 U0 G5 | 49,035 | B5 U0 G5 |
| 65L | 59,011 | B5 U0 G5 | 62,445 | B5 U0 G5 | 49,959 | B5 U0 G5 | 63,751 | B5 U0 G5 |

* Initial delivered lumens at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual production yield may vary between -10 and $+10 \%$ of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

5SH


CESTL Test Report \#: PL09258-001A OSQ-HO-A-**-5SH-40L-4OK-UL Initial Delivered Lumens: 42,362


OSQ-HO-A-**-5SH-40L-4OK-UL
Mounting Height: 25' ${ }^{\prime} 7.6 \mathrm{~m}$ ) A.F.G. Initial Delivered Lumens: 41,542 Initial FC at grade

| Type V Short Distribution |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lumen Package | 3000K/70 CRI |  | 4000K/70 CRI |  | 5000K/90 CRI |  | 5700K/70 CRI |  |
|  | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings" Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings* Per TM-15-11 | Initial Delivered Lumens* | BUG <br> Ratings** Per TM-15-11 |
| 40L | 39,258 | B5 U0 G5 | 41,542 | B5 U0 G5 | 33,469 | B5 U0 G5 | 42,411 | B5 U0 G5 |
| 50L | 47,939 | B5 U0 G5 | 50,729 | B5 U0 G5 | 41,055 | B5 U0 G5 | 51,790 | B5 U0 G5 |
| 65L | 62,326 | B5 U0 G5 | 65,953 | B5 U0 G5 | 52,766 | B5 U0 G5 | 67,332 | B5 U0 G5 |

* Initial delivered lumens at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual production yield may vary between -10 and $+10 \%$ of initial delivered lumens
${ }^{* *}$ For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

OSQ ${ }^{\text {TM }}$ High Output LED Area/Flood Luminaire featuring Cree TrueWhite ${ }^{\circledR}$ Technology

## Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/ outdoor/area/area-osq-high-output

15D


CESTL Test Report \#: PL09259-001A OSQ-HO-A-**-15D-40L-40K-UL Initial Delivered Lumens: 43,172


OSQ-HO-A-**-15D-40L-4OK-UL Mounting Height: $25^{\prime}(7.6 \mathrm{~m})$ A.F.G., $60^{\circ}$ Tilt Initial Delivered Lumens: 41,542 Initial FC at grade

| $15^{\circ}$ Flood Distribution |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Lumen Package | 3000K/70 CRI | 4000K/70 CRI | 5000K/90 CRI | 5700K/70 CRI |
|  | Initial Delivered Lumens* | Initial Delivered Lumens* | Initial Delivered Lumens* | Initial Delivered Lumens* |
| 40L | 39,258 | 41,542 | 33,469 | 42,411 |
| 50L | 47,939 | 50,729 | 41,055 | 51,790 |
| 65L | 62,326 | 65,953 | 52,766 | 67,332 |

* Initial delivered lumens at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual production yield may vary between -10 and $+10 \%$ of initial delivered lumens

25D


CESTL Test Report \#: PL09260-001A OSQ-HO-A-**-25D-40L-4OK-UL


OSQ-HO-A-**-25D-40L-4OK-UL
Mounting Height: $25^{\prime}(7.6 \mathrm{~m})$ A.F.G., $60^{\circ}$ Tilt Initial Delivered Lumens: 41,542 Initial FC at grade

| $\mathbf{2 5}$ 年 Flood Distribution |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| Lumen <br> Package | $3000 \mathrm{~K} / 70$ CRI | $4000 \mathrm{~K} / 70$ CRI | $5000 \mathrm{~K} / 90$ CRI | $5700 \mathrm{~K} / 70$ CRI |
|  | Initial Delivered <br> Lumens* | Initial Delivered <br> Lumens* | Initial Delivered <br> Lumens* | Initial Delivered <br> Lumens* |
|  | 39,258 | 41,542 | 33,469 | 42,411 |
| 50 L | 47,939 | 50,729 | 41,055 | 51,790 |
| 65 L | 62,326 | 65,953 | 52,766 | 67,332 |

* Initial delivered lumens at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual production yield may vary between -10 and $+10 \%$ of initial delivered lumens


## Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/ outdoor/area/area-osq-high-output

40D


CESTL Test Report \#: PL09261-001A OSQ-HO-A-**-40D-40L-40K-UL Initial Delivered Lumens: 43,698


OSQ-HO-A-**-40D-40L-40K-UL
Mounting Height: $25^{\prime}(7.6 \mathrm{~m})$ A.F.G., $60^{\circ}$ Tilt Initial Delivered Lumens: 41,542 Initial FC at grade

| $\mathbf{4 0 ^ { \circ }}$ Flood Distribution |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| Lumen <br> Package | $3000 \mathrm{~K} / 70$ CRI | 4000K/70 CRI | $5000 \mathrm{~K} / 90$ CRI | $5700 \mathrm{~K} / 70$ CRI |
|  | Initial Delivered <br> Lumens | Initial Delivered <br> Lumens $^{\circ}$ | Initial Delivered <br> Lumens | Initial Delivered <br> Lumens |
|  | 39,258 | 41,542 | 33,469 | 42,411 |
| 50 L | 47,939 | 50,729 | 41,055 | 51,790 |
| 65 L | 62,326 | 65,953 | 52,766 | 67,332 |

* Initial delivered lumens at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual production yield may vary between -10 and $+10 \%$ of initial delivered lumens

60D


CESTL Test Report \#: PL09262-001A CESTL TO-A-**-60D-40L-40K-UL
OSQ-HO-A-**-60D-40L-40K-UL
Initial Delivered Lumens: 42,715


OSQ-HO-A-**-60D-40L-4OK-UL
Mounting Height: $25^{\prime}(7.6 \mathrm{~m})$ A.F.G., $60^{\circ}$ Tilt Mounting Height: $25^{\prime}(7.6 \mathrm{~m})$ A.F.G Initial Delivered L

| $60^{\circ}$ Flood Distribution |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 3000K/70 CRI | 4000K/70 CRI | 5000K/90 CRI | 5700K/70 CRI |
| Package | Initial Delivered Lumens* | Initial Delivered Lumens* | Initial Delivered Lumens* | Initial Delivered Lumens* |
| 40L | 39,258 | 41,542 | 33,469 | 42,411 |
| 50L | 47,939 | 50,729 | 41,055 | 51,790 |
| 65L | 62,326 | 65,953 | 52,766 | 67,332 |

* Initial delivered lumens at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual production yield may vary between -10 and $+10 \%$ of initial delivered lumens

OSQ ${ }^{\text {TM }}$ High Output LED Area/Flood Luminaire featuring Cree TrueWhite ${ }^{\circledR}$ Technology

## Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/ outdoor/area/area-osq-high-output

120D


CESTL Test Report \#: PL09725-001A OSQ-HO-A-**-120D-4OL-40K-UL Initial Delivered Lumens: 43,044


OSQ-HO-A-**-120D-40L-4OK-UL Mounting Height: $25^{\prime}(7.6 \mathrm{~m})$ A.F.G., $60^{\circ}$ Tilt Initial Delivered Lumens: 41,542 Initial FC at grade

| $\mathbf{1 2 0}{ }^{\circ}$ Flood Distribution |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| Lumen <br> Package | $3000 \mathrm{~K} / 70$ CRI | $4000 \mathrm{~K} / 70$ CRI | $5000 \mathrm{~K} / 90$ CRI | $5700 \mathrm{~K} / 70$ CRI |
|  | Initial Delivered <br> Lumens $^{*}$ | Initial Delivered <br> Lumens $^{*}$ | Initial Delivered <br> Lumens* | Initial Delivered <br> Lumens* |
|  | 39,258 | 41,542 | 33,469 | 42,411 |
| 50 L | 47,939 | 50,729 | 41,055 | 51,790 |
| 65 L | 62,326 | 65,953 | 52,766 | 67,332 |

* Initial delivered lumens at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual production yield may vary between -10 and $+10 \%$ of initial delivered lumens


## WSN



CESTL Test Report \#: PL07695-001A OSQ-A-**-WSN-U-30K-UL Initial Delivered Lumens: 23,116


OSQ-HO-A-**-WSN-40L-4OK-UL Mounting Height: $25^{\prime}(7.6 \mathrm{~m})$ A.F.G., $60^{\circ}$ tilt Initial Delivered Lumens: 41,542 Initial FC at grade

| Wide Sign Distribution |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| Lumen <br> Package | $3000 \mathrm{~K} / 70$ CRI | $4000 \mathrm{~K} / 70$ CRI | $5000 \mathrm{~K} / 90$ CRI | $5700 \mathrm{~K} / 70$ CRI |
|  | Initial Delivered <br> Lumens* | Initial Delivered <br> Lumens $^{*}$ | Initial Delivered <br> Lumens* | Initial Delivered <br> Lumens* $^{*}$ |
|  | 39,258 | 41,542 | 33,469 | 42,411 |
| 50 L | 47,939 | 50,729 | 41,055 | 51,790 |
| 65 L | 62,326 | 65,953 | 52,766 | 67,332 |

* Initial delivered lumens at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual production yield may vary between -10 and $+10 \%$ of initial delivered lumens


## Luminaire EPA

| Adjustable Arm Mount - OSQ-HO-AA Weight: $40 \mathrm{~L} / 50 \mathrm{~L}, 120-480 \mathrm{~V}: 73.0 \mathrm{lbs}$. (33.1kg); 65L, 120-480V: 75.0 lbs . (34.0kg) |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Single | 2 2 $180^{\circ}$ | 2 29 $90^{\circ}$ | 3 29 $90^{\circ}$ | 3 2 $120^{\circ}$ | 3 a $180^{\circ}$ | 4 2 $180^{\circ}$ | 4 290 |
| Tenon Configuration ( $0^{\circ}-90^{\circ}$ Tilt); If used with Cree Lighting tenons, please add tenon EPA with Luminaire EPA |  |  |  |  |  |  |  |
| PB-1A*; PW-1A3** | $\begin{aligned} & \text { PB-2A*; PB-2R2.375; } \\ & \text { PW-2A3** } \end{aligned}$ | $\begin{aligned} & \text { PB-2A*; PB-2R2.375; } \\ & \text { PW-2A3** } \end{aligned}$ |  | PB-3A*; PB-3R2.375 | PB-3A*; PB-3R2.375 | $\begin{aligned} & \text { PB-4A*(180); } \\ & \text { PB-4R2.375 } \end{aligned}$ |  |
| $0^{\circ}$ Tilt |  |  |  |  |  |  |  |
| 1.16 | 2.03 | 2.03 | 2.90 | 2.63 | 2.90 | 3.77 | 3.77 |
| $10^{\circ}$ Tilt |  |  |  |  |  |  |  |
| 1.67 | 3.06 | 3.06 | 4.45 | 4.27 | 4.45 | 5.83 | 5.83 |
| $20^{\circ}$ Tilt |  |  |  |  |  |  |  |
| 2.35 | 4.41 | 4.41 | 6.48 | 6.34 | 6.48 | 8.54 | 8.54 |
| $30^{\circ}$ Tilt |  |  |  |  |  |  |  |
| 2.99 | 5.70 | 5.70 | 8.41 | 8.29 | 8.41 | 11.12 | 11.12 |
| $45^{\circ}$ Tilt |  |  |  |  |  |  |  |
| 3.85 | 7.41 | 7.41 | 10.98 | 10.89 | 10.98 | 14.54 | 14.54 |
| $60^{\circ}$ Tilt |  |  |  |  |  |  |  |
| 4.51 | 8.73 | 8.73 | 12.95 | 12.91 | 12.95 | 17.18 | 17.18 |
| $70^{\circ}$ Tilt |  |  |  |  |  |  |  |
| 4.83 | 9.37 | 9.37 | 13.91 | 13.88 | 13.91 | 18.45 | 18.45 |
| $80^{\circ}$ Tilt |  |  |  |  |  |  |  |
| $5.02$ | 9.76 | 9.76 | 14.50 | 14.44 | 14.50 | 19.24 | 19.24 |
| $90^{\circ}$ Tilt |  |  |  |  |  |  |  |
| $5.02$ | 9.76 | 9.76 | 14.50 | 14.44 | 14.50 | 19.24 | 19.24 |

These EPA size: $3\left(3^{\prime \prime}\right), 4\left(4^{\prime}\right), 5\left(5^{\prime \prime}\right)$, or $6\left(6^{\prime \prime}\right)$ for single, double or triple luminaire orientation or $4(4), 5(5)$, or $6\left(6^{\prime \prime}\right)$ for quad luminaire orientation

Tenon EPA

| Part Number | EPA |
| :--- | :--- |
| PB-1A* | None |
| PB-2A* | 0.82 |
| PB-3A* | 1.52 |
| PB-4A*(180) | 2.22 |
| PB-4A*(90) | 1.11 |
| PB-2R2.375 | 0.92 |
| PB-3R2.375 | 1.62 |
| PB-4R2.375 | 2.32 |
| PW-1A3** | 0.47 |
| PW-2A3** | 0.94 |
| WM-2 | 0.08 |
| WM-4 | 0.25 |
| WM-DM | None |


${ }^{\ddagger}$ Refer to the Bracket and Tenons spec sheet for more details

OSQ ${ }^{\text {TM }}$ High Output LED Area/Flood Luminaire featuring Cree TrueWhite ${ }^{\circledR}$ Technology

## Luminaire EPA

| Fixed Arm Mount - OSQ-HO-DA Weight: 40L/50L, 120-480V: $70.0 \mathrm{lbs} .(31.8 \mathrm{~kg})$; 65L, 120-480V: 72.0 lbs . (32.7kg) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Single | $2 \mathrm{a} 180^{\circ}$ | $2 \mathrm{C} 90^{\circ}$ | 319 $90^{\circ}$ | 31 $120^{\circ}$ | $4 \mathrm{C} 90^{\circ}$ |
| 1.06 | 1.93 | 1.93 | 2.80 | 2.53 | 3.67 |

Direct Mount Configurations

| Compatibility with OSQ-HO-DA Direct Arm Mount |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Input Delivered Lumens | 2 a $90^{\circ}$ | 2 1 $180^{\circ}$ | $3 \mathrm{C} 90^{\circ}$ | $3 \mathrm{~A} 120^{\circ}$ | $4 \mathrm{a} 90^{\circ}$ |
| 3" Square |  |  |  |  |  |
| 40L/50L/65L | N/A | $\checkmark$ | N/A | N/A | N/A |
| 3" Round |  |  |  |  |  |
| 40L/50L/65L | N/A | $\checkmark$ | N/A | $\checkmark$ | N/A |
| 4" Square |  |  |  |  |  |
| 40L/50L/65L | $\checkmark$ | $\checkmark$ | $\checkmark$ | N/A | $\checkmark$ |
| 4" Round* |  |  |  |  |  |
| 40L/50L/65L | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| 5" Square |  |  |  |  |  |
| 40L/50L/65L | $\checkmark$ | $\checkmark$ | $\checkmark$ | N/A | $\checkmark$ |
| 5" Round |  |  |  |  |  |
| 40L/50L/65L | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| 6" + Square |  |  |  |  |  |
| 40L/50L/65L | $\checkmark$ | $\checkmark$ | $\checkmark$ | N/A | $\checkmark$ |
| 6" + Round |  |  |  |  |  |
| 40L/50L/65L | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |

OSQ™ High Output LED Area/Flood Luminaire featuring Cree TrueWhite ${ }^{\circledR}$ Technology

AA Mount


RR/RL Configuration


RL

NEMA ${ }^{\oplus}$ 7-Pin Photocell Receptacle location (ordered as an option)


## Town of Southern Shores

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www.southernshores-nc.gov

## PLANNING BOARD <br> GENERAL APPLICATION FORM <br> TOWN OF SOUTHERN SHORES, NC 27949

NOTE: The Planning Board will follow the specific provisions of the Zoning Ordinance Chapter 36. Article X Administration and Enforcement, Section 36-299.

Please check the applicable Chapter/Article:

- Chapter 30. Subdivisions-Town Code
- Chapter 36. Article VII. Schedule of District Regulations. Section 36-207 C-General Commercial District
- Chapter 36. Article IX. Planned Unit Development (PUD)
$\boxtimes$ Chapter 36. Article X. Administration and Enforcement, Section 36-299 (b) Application for Building Permits and Site Plan Review other than one and two family dwelling units *
- Chapter 36. Article X. Section 36-300-Application for Permit for Conditional Use
- Chapter 36. Article X. Section 36-303 Fees
- Chapter 36. Article X. Section 36-304-Vested Rights
- Chapter 36. Article XIV. Changes and Amendments

Certification and Standing: As applicant of standing for project to be reviewed I certify that the information on this application is complete and accurate.

## Applicant

Name Southern Shores Owner, LLC_(Applicant must be property
owner by Town policy)
Address: 610 E. Morehead St., Suite 100

$$
\text { Charlotte, NC } 28202
$$

Phone 704.319.4922
Email lkpartee@astonprop.com
Applicant's Representative (if any)
Name Aston Properties, L. Karen Partee, VP Const \& Dev Agent, Contractor, Other (Circle one)
Address 610 E. Morehead St., Suite 100
$\qquad$ Fee Due $=\$ 3,000.00$
Phone 704.319.4922 Emailkpartee@astonprop.com
Property Involved: X Southern Shores __Martin's Point (Commercial only)
Address: 5539 N. Croatan Highway $\qquad$ Zoning district $\qquad$ C PIN 986720717057
Section $\qquad$ Block $\qquad$ Lot $\qquad$ Lot size (sq.ft.) 18.1 Ac

Request: X Site Plan Review __Final Site Plan Review __Conditional Use __Permitted Use __PUD (Planned Unit Development) $\qquad$ Subdivision Ordinance $\qquad$ Vested Right $\qquad$ Variance

Change To: __Zoning Map $\qquad$ Zoning Ordinance


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\frac{\text { June } 14,2021}{\text { Date }}
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XSPW ${ }^{\text {TM }}$ LED Wall Mount Luminaire featuring Cree TrueWhite ${ }^{\circledR}$ Technology

## Product Description

The XSPW ${ }^{\text {TM }}$ LED wall mount luminaire has a slim, low profile design intended for outdoor wall mounted applications. The rugged lightweight aluminum housing and mounting box are designed for installation over standard single gang J-Boxes and mud ring single gang J-Boxes. The luminaire allows for through-wired or conduit entry from the top, bottom, sides and rear. The housing design is intended specifically for LED technology including a weathertight LED driver compartment and thermal management. Optic design features industry-leading NanoOptic ${ }^{\oplus}$ Precision Delivery Grid ${ }^{\top M}$ system in multiple distributions.


## Performance Summary

NanoOptic ${ }^{\oplus}$ Precision Delivery Grid ${ }^{\text {TM }}$ optic
Assembled in the U.S.A. of U.S. and imported parts
CRI: Minimum 70 CRI (3000K, 4000K \& 5700K); 90 CRI (5000K)
CCT: 3000K, 4000K, 5000K, 5700K
Limited Warranty ${ }^{+}$: 10 years on luminaire/10 years on Colorfast DeltaGuard ${ }^{\circledR}$ finish
See http://lighting.cree.com/warranty for warranty terms

## Accessories

## Field-Installed

## Beauty Plate

WM-PLT12** - 12" ( 305 mm ) Square
WM-PMT14** - 14" $(356 \mathrm{~mm})$ Square

- Covers holes left by incumbent wall packs
** Must specify color


Multi-Level Sensor location (ordered as an option)

## Weight

9.5 (bs. (4.3kg)

## Ordering Information

Example: XSPW-B-WM-2ME-2L-30K-UL-BK

| XSPW | B | WM |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Product | Version | Mounting | Optic | Lumen Package* | CCT | Voltage | Color Options | Options |
| XSPW | B | WM <br> Wall | 2ME <br> Type II Medium 3ME <br> Type III Medium 4ME <br> Type IV Medium | 2L <br> 2,500 lumens <br> 4L <br> 4,200 lumens <br> 6L <br> 6,000 lumens <br> 8L <br> 8,425 lumens | 30K <br> 3000K <br> - 70 CRI <br> 40K <br> 4000K <br> - 70 CRI <br> 50K <br> 5000K <br> -90 CRI <br> 57K <br> 5700K <br> - 70 CRI | UL <br> Universal 120-277V <br> UH <br> Universal 347-480V <br> 34 <br> 347 V | BK <br> Black <br> BZ <br> Bronze <br> SV <br> Silver <br> WH <br> White | ML Multi-Level <br> - Refer to ML spec sheet for details <br> - Available with UL voltage only <br> P Button Photocell <br> - Not available with ML or PML option <br> - Available with UL and 34 voltages only <br> PML Prgrammable Multi-Level <br> - Refer to PML spec sheet for details <br> - Available with UL voltage only |

[^3]
## Product Specifications

## CREE TRUEWHITE ${ }^{\oplus}$ TECHNOLOGY

A revolutionary way to generate high-quality white light, Cree TrueWhite ${ }^{\circledR}$ Technology is a patented approach that delivers an exclusive combination of $90+$ CRI, beautiful light characteristics and lifelong color consistency, all while maintaining high luminous efficacy - a true no compromise solution.

## CONSTRUCTION \& MATERIALS

- Slim, low profile design
- Luminaire housing specifically designed for LED applications with advanced LED thermal management and driver
- Luminaire mounting box designed for installation over standard single gang J-Boxes and mud ring single gang J-Boxes
- Luminaire can also be direct mounted to a wall and surface wired
- Secures to wall with four $3 / 16^{\prime \prime}$ ( 5 mm ) screws (by others)
- Conduit entry from top, bottom, sides, and rear
- Exclusive Colorfast DeltaGuard ${ }^{\circledR}$ finish features an E-coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Silver, black, white and bronze are available
- Weight: 9.5 lbs . 4.3 kg )


## ELECTRICAL SYSTEM

- Input Voltage: $120-277 \mathrm{~V}$ or $347-480 \mathrm{~V}, 50 / 60 \mathrm{~Hz}$
- Power Factor: > 0.9 at full load
- Total Harmonic Distortion: < 20\% at full load
- Integral 10 kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- Designed with 0-10V dimming capabilities. Controls by others
- 10V Source Current: 0.15 mA


## REGULATORY \& VOLUNTARY QUALIFICATIONS

- cULus Listed (pending)
- Suitable for wet locations
- Designed for downlight applications only
- Designed and suitable for easy through-wiring Enclosure rated IP66 per IEC 60529 (pending)
- 10 kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2 (pending)
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions (pending)
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Meets Buy American requirements within ARRA

| Delivered Lumens \& Electrical Data* |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lumen Package | CCT/CRI | System Watts | Efficacy | Total Current (A) |  |  |  |  |  |
|  |  | $\begin{aligned} & 120- \\ & 480 \mathrm{~V} \end{aligned}$ |  | 120V | 208V | 240V | 277V | 347 V | 480V |
| 2L | $30 \mathrm{~K} / 70 \mathrm{CRI}$ | 20 | 125 | 0.19 | 0.11 | 0.09 | 0.08 | 0.06 | 0.05 |
|  | 40K/70 CRI | 19 | 132 | 0.18 | 0.10 | 0.09 | 0.08 | 0.06 | 0.04 |
|  | 50K/90 CRI | 24 | 104 | 0.22 | 0.13 | 0.11 | 0.10 | 0.08 | 0.06 |
|  | 57K/70 CRI | 19 | 132 | 0.18 | 0.10 | 0.09 | 0.08 | 0.06 | 0.04 |
| 4L | $30 \mathrm{~K} / 70 \mathrm{CRI}$ | 33 | 127 | 0.31 | 0.18 | 0.15 | 0.13 | 0.11 | 0.08 |
|  | 40K/70 CRI | 32 | 131 | 0.30 | 0.17 | 0.15 | 0.13 | 0.10 | 0.07 |
|  | 50K/90 CRI | 41 | 102 | 0.38 | 0.22 | 0.19 | 0.16 | 0.13 | 0.09 |
|  | 57K/70 CRI | 31 | 135 | 0.29 | 0.17 | 0.14 | 0.12 | 0.10 | 0.07 |
| 6 L | $30 \mathrm{~K} / 70 \mathrm{CRI}$ | 50 | 120 | 0.46 | 0.27 | 0.23 | 0.20 | 0.16 | 0.12 |
|  | 40K/70 CRI | 48 | 125 | 0.44 | 0.26 | 0.22 | 0.19 | 0.15 | 0.11 |
|  | $50 \mathrm{~K} / 90 \mathrm{CRI}$ | 63 | 95 | 0.58 | 0.34 | 0.29 | 0.25 | 0.20 | 0.15 |
|  | 57K/70 CRI | 46 | 130 | 0.43 | 0.25 | 0.21 | 0.18 | 0.15 | 0.11 |
| 8L | $30 \mathrm{~K} / 70 \mathrm{CRI}$ | 77 | 109 | 0.71 | 0.41 | 0.36 | 0.31 | 0.25 | 0.18 |
|  | $40 \mathrm{~K} / 70 \mathrm{CRI}$ | 73 | 115 | 0.68 | 0.39 | 0.34 | 0.29 | 0.23 | 0.17 |
|  | 50K/90 CRI | 77 | 93 | 0.71 | 0.41 | 0.36 | 0.31 | 0.25 | 0.18 |
|  | 57K/70 CRI | 72 | 117 | 0.67 | 0.38 | 0.33 | 0.29 | 0.23 | 0.17 |

* Electrical data at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$. Actual wattage may differ by $+/-10 \%$ when operating between $120-480 \mathrm{~V}+/-10 \%$

| XSPW Series Lumen Maintenance Factors ${ }^{1}$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Initial LMF | 25 K hr Projected ${ }^{2}$ LMF | 50K hr Projected ${ }^{2}$ <br> LMF | 75 K hr Projected ${ }^{2}$ LMF | 100K hr Calculated ${ }^{3}$ LMF |
| $5^{\circ} \mathrm{C}\left(41^{\circ} \mathrm{F}\right)$ | 1.04 | 1.00 | 0.96 | 0.92 | 0.88 |
| $10^{\circ} \mathrm{C}\left(50^{\circ} \mathrm{F}\right)$ | 1.03 | 0.99 | 0.95 | 0.91 | 0.87 |
| $15^{\circ} \mathrm{C}\left(59^{\circ} \mathrm{F}\right)$ | 1.02 | 0.98 | 0.94 | 0.90 | 0.86 |
| $20^{\circ} \mathrm{C}\left(68^{\circ} \mathrm{F}\right)$ | 1.01 | 0.97 | 0.93 | 0.89 | 0.85 |
| $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$ | 1.00 | 0.96 | 0.92 | 0.88 | 0.84 |

${ }^{1}$ Lumen maintenance values at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$ are calculated per TM-21 based on LM-80 data and in-situ luminaire testing. . Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors
${ }^{2}$ In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip)
${ }^{3}$ In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing (IDUT) i.e. the packaged LED chip)

XSPW ${ }^{\text {TM }}$ LED Wall Mount Luminaire featuring Cree TrueWhite ${ }^{\circledR}$ Technology

| Type II Medium Distribution |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lumen Package | 3000K |  | 4000K |  | 5000K |  | 5700K |  |
|  | Initial Delivered Lumens* | BUG Ratings** <br> Per TM-15-11 | Initial Delivered Lumens* | $\begin{aligned} & \text { BUG Ratings** } \\ & \text { Per TM-15-11 } \end{aligned}$ | Initial Delivered Lumens* | $\begin{aligned} & \text { BUG Ratings** } \\ & \text { Per TM-15-11 } \end{aligned}$ | Initial Delivered Lumens* | $\begin{aligned} & \text { BUG Ratings** } \\ & \text { Per TM-15-11 } \end{aligned}$ |
| 2L | 2,500 | TBD | 2,500 | TBD | 2,500 | TBD | 2,500 | TBD |
| 4L | 4,200 | TBD | 4,200 | TBD | 4,200 | TBD | 4,200 | TBD |
| 6L | 6,000 | TBD | 6,000 | TBD | 6,000 | TBD | 6,000 | TBD |
| 8L | 8,425 | TBD | 8,425 | TBD | 7,125 | TBD | 8,425 | TBD |
| Type III Medium Distribution |  |  |  |  |  |  |  |  |
|  | 3000K |  | 4000K |  | 5000K |  | 5700K |  |
| Lumen Package | Initial Delivered Lumens* | BUG Ratings** <br> Per TM-15-11 | Initial Delivered Lumens* | BUG Ratings** Per TM-15-11 | Initial Delivered Lumens* | BUG Ratings** <br> Per TM-15-11 | Initial Delivered Lumens* | BUG Ratings** <br> Per TM-15-11 |
| 2L | 2,500 | TBD | 2,500 | TBD | 2,500 | TBD | 2,500 | TBD |
| 4L | 4,200 | TBD | 4,200 | TBD | 4,200 | TBD | 4,200 | TBD |
| 6L | 6,000 | TBD | 6,000 | TBD | 6,000 | TBD | 6,000 | TBD |
| 8L | 8,425 | TBD | 8,425 | TBD | 7,125 | TBD | 8,425 | TBD |
| Type IV Medium Distribution |  |  |  |  |  |  |  |  |
|  | 3000K |  | 4000K |  | 5000K |  | 5700K |  |
| Lumen Package | Initial Delivered Lumens* | BUG Ratings** <br> Per TM-15-11 | Initial Delivered Lumens* | BUG Ratings** <br> Per TM-15-11 | Initial Delivered Lumens* | $\begin{aligned} & \text { BUG Ratings** } \\ & \text { Per TM-15-11 } \end{aligned}$ | Initial Delivered Lumens* | BUG Ratings** <br> Per TM-15-11 |
| 2L | 2,500 | TBD | 2,500 | TBD | 2,500 | TBD | 2,500 | TBD |
| 4L | 4,200 | TBD | 4,200 | TBD | 4,200 | TBD | 4,200 | TBD |
| 6 L | 6,000 | TBD | 6,000 | TBD | 6,000 | TBD | 6,000 | TBD |
| 8L | 8,425 | TBD | 8,425 | TBD | 7,125 | TBD | 8,425 | TBD |

Location:
Subdivision:

Phone: (252) 475-5080

Owner Address:

610 E MOREHEAD ST STE 100
CHARLOTTE, NC 28202

5500 N CROATAN HWY - SOUTHERN SHORES
SUBDIVISION - NONE
LOT: BLK: SEC: JDC
2. Any alteration in soil conditions (including location of structures and appurtenances) or modification in use, design wastewater flow or wastewater characteristics as specified in the associated improvement permit and application, may subject this authorization and associated permit(s) to revocation.
3. Comments:

PERMIT ALLOW FOR RENOVATIONS TO EXISTING COMMERCIAL BUILDING TO ALLOW FOR MARSHALLS DEPARTMENT STORE. OTHER USES FOR EXISTING SPACE REASSIGNED. USE OF LOW FLOW FIXTURES TO INCLUDE 0.5 GALLON PER FLUSH URINALS, 1.28 GALLONS PER FLUSH WATER CLOSETS AND 1.5 GPM FAUCETS TO BE INCORPORATED IN RENOVATIONS. ANY NEW PROPOSED FOOD SERVICE FACILITIES WILL REQUIRE SEPARATE APPROVAL FOR CONFIRMATION OF SEATING CAPACITY AND ABILITY TO CONNECT TO EXISTING GREASE TRAP OR ABILITY TO INSTALL NEW GREASE TRAP(S). EXISTING TREATMENT SYSTEM IS SUFFICIENT FOR CURRENT PROPOSED DEVELOPMENT. OTHER PERMITS REQUIRED BY THE TOWN OF SS.

This CA is valid for 60 months from the date of issuance.
Disclaimer: This permit does not relieve you of the responsibility to obtain any other necessary Federal, State or Local permit(s).

Owner Certification

## FINANCIAL ADVISORY AGREEMENT

The Financial Advisory Agreement (the "Agreement") is entered into on July 29, 2021, between the Town of Southern Shores, NC ("the Town") and DEC Associates, Inc. ("the Advisor"). The Agreement is specific to a Beach Nourishment/Shoreline Protection project financing specifically "the Financing" closing on or about October 2021.

In connection with the Financing, the Advisor will perform the following services:

1. Review financial and other information related to the Town and the project,
2. Evaluate alternative approaches and structures (GOs, COPs, Special Obligation, other structures, if available) for the Financing,
3. Assist in directing and coordinating credit processes to maximize the credit rating with lenders,
4. Assist in the development of a well-defined marketing strategy to achieve the best possible financing terms including the lowest cost, interest rate, and total debt service for the Financing,
5. Assist and advise in the selection of financing mode(s) and lender(s) and the negotiation of terms,
6. Assist the Town in working with the Local Government Commission, Bond Counsel, Town Attorney and others to implement the Financing,
7. Make presentations to Town Council, as requested, to discuss the FEMA Special Obligation Bonds.
8. Assist in the closing of the Financing by coordinating, reviewing, monitoring, and following-through on all elements of the financing process to insure timely and proper closing of the financing.
For these services DEC Associates, Inc will charge as the fee a sum of $\$ 30,000$, plus out of pocket expenses. Actual out of pocket expenses will be billed with the fee invoice. This Agreement is cancellable by the Town or the Advisor with thirty (30) days' notice. Upon notice by either party, services provided by DEC will be prorated and billed to the Town. This fee does not include services rendered by others.

Our firm is registered with the Securities and Exchange Commission (SEC) as a Municipal Advisor and has MA and MA-I filings with the SEC. Pursuant to our best practices and registration requirements, our firm, after reasonable diligence, has no known conflicts of interest pursuant to this contract. Additionally, our firm is not aware of any material legal or disciplinary events applying to it.


DEC ${ }^{\text {Ansocatates. }}$ Defining Emerging concepts
Town of Southern Shores, North Carolina
DEC Associates, Inc.


## Town of Southern Shores

## Budget Amendment Number \# 11



Explanation: Cost of DEC Associates, Inc. to provide financial advising to the Town for the Beach Nourishment Project.
The expected closing date to be October 2021.

Recommended By :
Cliff Ogburn, Town Manager
Approved By:

Tom Bennett, Mayor

Date

## TOWN OF SOUTHERN SHORES, NORTH CAROLINA RESOLUTION 2021-09-01


#### Abstract

Resolution of the Town of Southern Shores, North Carolina, Directing the Application to the local Government Commission for Approval of a Special Obligation Bond; Requesting local Government Commission approval of The Town's Special Obligation Bond; and certain related MATTERS


WHEREAS, the Town Council (the "Town Council") of the Town of Southern Shores, North Carolina (the "Town") hereby determines that it is necessary to provide beach nourishment for the purpose of beach erosion control and flood and hurricane protection works (the "Project");

WHEREAS, the Town has created two Municipal Service Districts (the "MSDs"), in accordance with Article 23 of Chapter 160A of the North Carolina General Statutes, in which the Project will be located;

WHEREAS, the Town Council is considering the issuance of a special obligation bond to finance the Project and related costs of issuance (the "2021 Bond") in an aggregate principal amount currently estimated not to exceed $\$ 8,100,000$;

WHEREAS, the Town has retained (A) Parker Poe Adams \& Bernstein LLP, as bond counsel for the 2021 Bond and (B) DEC Associates Inc., as financial advisor for the 2021 Bond;

WHEREAS, the Town Council wants the Town Finance Officer (1) to file with the North Carolina Local Government Commission (the "Commission") an application for its approval of the 2021 Bond, on a form prescribed by the Commission, (2) to request in such application that the Commission approve (a) the negotiation of the sale of the 2021 Bond to a financial institution (the "Purchaser") to be determined by the Authorized Officers, as defined herein, through a private placement and (b) the financing team for the 2021 Bond, (3) to state in such application such facts and to attach thereto such exhibits in regard to the 2021 Bond and to the Town and its financial condition, as may be required by the Commission, and (4) to take all other action necessary for the issuance of the 2021 Bond;

## NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF SOUTHERN SHORES, NORTH CAROLINA, AS FOLLOWS:

Section 1. That the 2021 Bond is to be issued by the Town for the purpose of providing funds (1) to finance the costs of the Project and (2) to pay the costs of issuing the 2021 Bond, as set out fully in the documents attached to the Town's application to the Commission. The use of the proceeds of the 2021 Bond, as described, is necessary in order to provide for beach erosion control and flood and hurricane protection works in the MSDs.

Section 2. That the Finance Officer, or her designee, is hereby authorized directed and designated to file an application with the Commission for its approval of the issuance of the 2021 Bond and is hereby authorized to request bids from financial institutions for the purchase of the 2021 Bond.

Section 3. In addition to the bond counsel and the financial advisor, the Authorized Officers are each hereby authorized to retain the services of other professionals as they deem necessary and appropriate to complete the transactions contemplated by this Resolution.

Section 4. The Town Council finds and determines and asks the Commission to find and determine from the Town's application and supporting documentation:
(1) that the issuance of the 2021 Bond is necessary or expedient;
(2) that the not to exceed stated principal amount of the 2021 Bond will be sufficient but is not excessive, when added to other money available to the Town, for the proposed Project;
(3) that the proposed Project is feasible;
(4) that the Town's debt management procedure and policies are good;
and
(5) that the 2021 Bond can be marketed at a reasonable interest cost to the Town.

Section 5. The Mayor, the Town Manager, the Finance Officer and the Town Clerk are hereby authorized, individually and collectively (the "Authorized Officers"), to do any and all other things necessary to complete the steps necessary for the issuance of the 2021 Bond.

Section 6. This Resolution is effective on the date of its adoption.

Thomas G. Bennett, Mayor<br>Town of Southern Shores, NC

Attest:

[^4])
) SS :
COUNTY OF DARE

I, Sheila Kane, Town Clerk of the Town of Southern Shores, North Carolina, DO HEREBY CERTIFY that the foregoing is a true and exact copy of a resolution entitled "RESOLUTION OF THE TOWN of Southern Shores, North Carolina, Directing the Application to the Local GOVERNMENT COMMISSION FOR APPROVAL OF A SPECIAL OBLIGATION BOND; REQUESTING LOCAL GOVERNMENT COMMISSION APPROVAL OF THE TOWN'S SPECIAL ObLIGATION BOND; AND CERTAIN RELATED MATTERS" adopted by the Town Council of the Town of Southern Shores, North Carolina, at a meeting held on the 7th day of September, 2021.

WITNESS my hand and the corporate seal of the Town of Southern Shores, North Carolina, this the 7th day of September 2021.
[Seal]

Sheila Kane<br>Town Clerk<br>Town of Southern Shores, North Carolina



## AGENDA ITEM SUMMARY

## MEETING DATE: September 7, 2021

ITEM TITLE: Consideration of Dare County Tourism Impact Grant
ITEM SUMMARY: Staff is requesting authorization to apply to the Dare County Tourism Board for a Tourism Impact Grant. The grant request would be for funding to secure traffic data that will be instrumental in helping the Town better evaluate and understand the impacts that tourism related traffic generates. Further funding may be requested to purchase equipment used to mitigate the impacts of tourism generated traffic. The town has contracted in previous summers to place signage and barricades along US 158 at South Dogwood to prohibit left hand turns on to South Dogwood. The grant request would be in an amount not to exceed $\$ 50,000$ and requires no match. The information collected is likely useful on a county wide level.

Companies such as Streelight Data, collect location records from smart phones and navigation devices in connected cars and trucks. Data is derived from navigation-GPS data and Location-Based Services (LBS) data. Adding context from numerous other sources like parcel data and digital road network data, they can develop a view into traffic patterns in Southern Shores as well as all of Dare County.

This data can help us to better understand where the traffic that cuts through the residential streets of Southern Shores originates from including from within the county or out. We can determine the volume of traffic that uses Southern Shores as a cut through by either turning off US 158 or NC 12, and where it exits the residential streets including the turning movements in general. This information would be on a platform that we can access and analyze data to see the routes taken to and through the Town.

STAFF RECOMMENDATION: Staff recommends approval of a grant application for the described purposes.

REQUESTED ACTION: A motion to authorize the Town Manager to apply for a DCTB Tourism Impact Grant.

ATTACHMENTS: Blank copy of Dare County Tourism Impact Grant Application

White paper explaining Streelight Data's Methodology and Data Sources

\title{

DARE COUNTY TOURISM BOARD <br> TOURISM IMPACT GRANT

## (DBA OUTER BANKS VISITORS BUREAU)

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## (DBA OUTER BANKS VISITORS BUREAU)

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## Program Intent

Dare County Tourism Board's Tourism Impact Grant (TIG) program was established to financially assist Dare County Governmental Units and other Non-profit Organizations with programs or services needed due to the impact of tourism on the County.

The Dare County Tourism Board (hereinafter "Tourism Board" or "Board") makes funding for TIG grants available by an annual appropriation as approved by the Board from short-term unappropriated funds. Short-term funds accrue from $30 \%$ of the $1 / 4$ of the $1 \%$ occupancy tax and $1 \%$ prepared meal tax revenues generated annually in the Special Revenue Fund.

Qualified applicants must submit an application containing an outline of the project, the impact of the project on tourism, a statement of need, a copy of the most recent balance sheet, and a budget overview of the entire project's funding and expenditures; which shall include other grants or secured funding services.

## Applicant Assumes This Risk

Should local, state or federal laws prohibit the Dare County Tourism Board's performance, disband the Dare County Tourism Board or repeal the Board's enabling legislation, then the Dare County Tourism Board shall have no obligation to fulfill the terms and obligations of this agreement, including, but not limited to funding and reimbursement of applicant's expenditures. If the Dare County Tourism Board's authority hereunder is limited or terminated, then this Agreement shall be void as of the effective date of said ordinance, law or regulation and the Dare County Tourism Board shall be forgiven all performance obligations that are its responsibility under this agreement that is or are made contrary to law. All applicants must agree to this tremendous limitation to the Dare County Tourism Board's performance obligations, assume the risks associated therewith, including the risk that the Applicant may not be reimbursed for expenditures under this program.

## Grant Criteria

A. Applicants shall be Dare County Local Governments or a non-profit entity with its principal place of business in Dare County and having its non-profit status conferred in writing under Section 501 of the U.S. Internal Revenue Code.
B. Project must be located in Dare County

# DARE COUNTY TOURISM BOARD (DBA OUTER BANKS VISITORS BUREAU) <br> TOURISM IMPACT GRANT RULES \& QUALIFICATIONS 

C. Match required for the Tourism Impact Grant shall be based on the amount awarded, as follows:

| AWARDED AMOUNT | REQUIRED MATCH AMOUNT |
| :--- | :--- |
| Below $\$ 50,000$ | No match required |
| $\$ 50,000-\$ 125,000$ | At least $25 \%$ match required from applicant |
| Over $\$ 125,000$ | At least $50 \%$ match required from applicant |

D. Tourism Impact Grant Projects must be completed by the end of one full fiscal year from the date of the award. Project extensions must be approved in writing by the Board or staff if the Board has granted that authority to the staff.
E. The Tourism Board will monitor the progress of each project. Should a project not materialize, or should it progress at a rate which would limit its viability (in the sole discretion of the Board), then the Board shall terminate or withdraw the award and grant itself, and the funds will be unencumbered and revert to the Tourism Impact Grant fund for future projects.
F. Matching funds and expenditures must be related to the project covered by this application and not incurred prior to the date of grant submission.
G. Grants will be paid as a reimbursement once the project is complete and all paid receipts (for both grant and match) presented as described under the terms of the Contract Agreement.
H. Expenditures shall not be used for operations customarily funded by Governmental entities (including but not limited to repairs and maintenance).
I. The following items are non-reimbursable: Preliminary architectural, engineering, surveying and other forms of professional services, in-kind services (ex. Administrative salaries of public employees) and any local, state or federal tax.
J. If grant funds will be used to purchase and/or to make improvements to real property, then the real property must be lien and encumbrance free (except as to liens and/or encumbrances that are specifically approved by the Tourism Board in writing). Applicant may be required to provide the Tourism Board with a written "opinion on title" by a North Carolina licensed attorney. The scope and form of the opinion will be determined by the Tourism Board on a case-by-case basis.

# DARE COUNTY TOURISM BOARD (DBA OUTER BANKS VISITORS BUREAU) <br> TOURISM IMPACT GRANT RULES \& QUALIFICATIONS 

K. Property (real or personal) purchased and/or developed with this grant assistance shall be retained for use of the public and the applicant agrees to return the amount of the grant to the Tourism Board should the property or facility be converted to some other use. The Board, in its sole discretion, may require certain restrictions or easements be recorded in the public registry to evidence this requirement and obligation of the applicant or property owner.
L. Grants cannot be transferred or assigned to a third party, unless approved by the Dare County Tourism Board in writing.
M. Requirement for reimbursement for approved project must have the following:

1. Approvals from all organizations directly or indirectly involved in proposed project must agree with all terms and conditions outlined. Burden of compliance rests with the applying organization.
2. Appropriate sign recognition of contribution made by the Dare County Tourism Board. To include Board logo and "Project Funded In Part By The Dare County Tourism Board" or other similar language approved by the Grant Administrator.
3. If not a physical capital project, appropriate recognition of contribution made by the Dare County Tourism Board, including logo, must be in press releases and all associated publicity materials.
4. Approved signage or other appropriate recognition must be maintained permanently.
5. Copies of all invoices and payments related to the project.
N. Applicant may only apply for one TIG grant per project, per Fiscal Year.
O. Funding of phase projects does not obligate the Dare County Tourism Board to funding of any future phases of the same project.
P. Approved organization must come to the Outer Banks Visitors Bureau to meet with the Grant Administrator prior to submitting an application. The purpose of this process is to jointly review the application and answer any questions the applicant may have.

# DARE COUNTY TOURISM BOARD (DBA OUTER BANKS VISITORS BUREAU) <br> TOURISM IMPACT GRANT RULES \& QUALIFICATIONS 

Q. Applications may be requested at any time; however, complete applications must be submitted between September 1 and September 30 by U.S. Postal Service. Personal hand-delivery of applications will be accepted during this period, Monday through Friday 9:00 AM - 4:30 PM (excluding any holiday). A receipt must be signed by a Bureau employee and the delivery person as evidence of delivery within the allotted application period. One original and 15 copies clipped together (NOT STAPLED) of the application and any collateral material is required.
R. Applications will be reviewed by the Grant Administrator as they are received. The applicant will be notified within seven days of receiving the application if it does not meet the requirements of the grant. The applicant will have a chance to modify, adjust and correct the application before it is submitted to the Steering Committee. The Grant Administrator and the Executive Director, or his/her designee will be available to assist the applicants.
S. All proposals that meet mechanical guidelines will be forwarded to the Steering Committee for consideration. The Steering Committee will make its recommendations to the full Board of Directors at a regularly scheduled Board meeting. Recommended Tourism Impact Grant projects will then be forwarded to the Dare County Board of Commissioners for consensus.
T. Applying organization will be notified within seven days following presentation to the Dare County Board of Commissioners as to acceptance or rejection of Tourism Impact Grant awards.

I have read and reviewed the documents and understand that our organization bears the responsibility to understand and comply with all terms and conditions. This application vests applicant with no rights or expectations of approval and certainly not receipt of funds.

Name and title of person making application: $\qquad$

Name of Local Government or Non-Profit: $\qquad$

# STREETLIGHT hsight 

## Our Methodology and Data Sources

Updated October 2018

# StreetLight InSight ${ }^{\circledR}$ Metrics: Our Methodology and Data Sources 

This white paper describes the data sources and methodology employed by StreetLight Data to develop travel pattern Metrics. This document is relevant for all StreetLight InSight Metrics, whether they are available via the StreetLight InSight platform, via data API, or via custom delivery.

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Locational Data Sources and Probe Technologies .....  1
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## Locational Data Sources and Probe Technologies

StreetLight Data's Metrics are currently derived from two types of locational "Big Data": navigation-GPS data and Location-Based Services (LBS) data. StreetLight has incorporated and evaluated several other types of mobile data supply in the past, including cellular tower and ad-network derived data.

As the mobile data supply landscape has evolved and matured over time, we have determined that a combination of navigation-GPS data and LBS data is best suited to meet the needs of transportation planners. Our team phased out the use of cellular tower data because its low spatial precision and infrequent pinging frequency did not meet our standards for use in corridor studies, routing analyses, and many other Metrics. LBS data is suitable for these studies and offers a comparable sample size to cellular tower data.

As of July 2018, StreetLight's data repositories process analytics for about 65M devices, or $\sim 23 \%$ of the adult US and Canadian population, and about $12 \%$ of commercial truck trips. As detailed later in this report, sample size varies regionally, historically and by type of analysis conducted.

Our data supply grows each month as updated data sets are provided by suppliers. We currently use one major navigation-GPS data supplier, INRIX, and one LBS data supplier, Cuebiq. See Table 1, below, for more details on the different locational data sources StreetLight Data has recently evaluated.

Item 8.

Table 1 - Overview of Big Data supply options for transportation analytics. StreetLight recommends and uses a mix-and-match approach currently focused on navigation-GPS and LBS data types.

| Type | Pros | Cons | Notes |
| :--- | :--- | :--- | :--- |

## Our Navigation-GPS and LBS Data Sources

In this section, we will explain why access to two different Big Data sources is uniquely beneficial for transportation professionals. First, it is important to note that StreetLight InSight is:

- The first and only on-demand platform for planners to process Big Data into customized transportation analytics to their unique specifications, including the type of Big Data they would like to use.
- The first and only online platform that automatically provides comprehensive sample size information for analyses. (See more information on sample size on page 8 of this report.)

We selected navigation-GPS and LBS data because they are complementary resources that provide unique and valuable travel pattern information for transportation planning. See Figure 1 below for a visualization of these data sources.

Figure 1 - Filtered visualization of a subset of unprocessed navigation-GPS and LBS data near a mall in Fremont, California.


## Location-Based Services (LBS) Data

LBS data can be processed into personal travel patterns at a comprehensive scale. Its fairly high spatial precision and regular ping rate allow for capturing trips as well as activity patterns (i.e.: home and work locations), trip purpose, and demographics. This makes it an ideal alternative to data derived from cellular towers, which also has a large sample size but unfortunately lacks spatial precision and pings infrequently.

Cuebiq, our LBS data supplier, provides pieces of software (called SDKs) to developers of mobile apps to facilitate Location-Based Services. These smartphone apps include couponing,
dating, weather, tourism, productivity, locating nearby services (i.e.: finding the closest restaurants, banks, or gas stations), and many more apps, all of which utilize their users' location in the physical world as part of their value. The apps collect anonymous user locations when they are operating in the foreground. In addition, these apps may collect anonymous user locations when operating in the background. This "background" data collection occurs when the device is moving. LBS software collects data with WiFi proximity, a-GPS and several other technologies. In fact, locations may be collected when devices are without cell coverage or in airplane mode. Additionally, all the data that StreetLight uses has better than 20-meter spatial precision. (Similarly, our partner INRIX collects some LBS data from navigationoriented smart phone apps).

## Navigation-GPS Data

Navigation-GPS data has a smaller sample size than LBS data, but it does differentiate commercial truck trips from personal vehicle trips. This makes navigation-GPS data ideal for commercial travel pattern analyses. Navigation-GPS data is also suitable for very fine resolution personal vehicle travel analyses (e.g.: speed along a very short road segment) because of its extremely high spatial precision and very frequent ping rate.

INRIX, our navigation-GPS data supplier, provides data that comes from commercial fleet navigation systems, navigation-GPS devices in personal vehicles, and turn-by-turn navigation smartphone apps. (These apps produce data that are like the LBS data described above). Segmented analytics for medium-duty and heavy-duty commercial trucks are available. For commercial trucks, if the vehicle's on-board fleet management system is within INRIX's partner system, INRIX (and thus StreetLight) will collect a ping every one to three minutes whenever the vehicle is on, even if the driver is not actively using navigation.

For personal vehicles, if the vehicle is in INRIX's partner system and has a navigation console, INRIX (and thus StreetLight) will collect a "ping" every few seconds whenever the vehicle is on, even if the driver is not actively using the navigation system. This provides a very complete picture of vehicles' travel patterns and certainty that the trips are in vehicles.

## Data Processing Methodology

The following section contains an overview of the fundamental methodology that StreetLight Data uses to develop all Metrics. Each StreetLight InSight Metric has specific methodological details which can be shared with clients as needed by request.

## Step 1 - ETL (Extract Transform and Load)

First, we pull data in bulk batches from our suppliers' secure cloud environments. This can occur daily, weekly, or monthly, depending on the supplier. The data do not contain any personally identifying information. They have been de-identified by suppliers before they are
obtained by StreetLight. StreetLight Data does not possess data that contains any personally identifying information.

The ETL process not only pulls the data from one environment securely to another, but also eliminates corrupted or spurious points, reorganizes data, and indexes it for faster retrieval and more efficient storage.

## Step 2 - Data Cleaning and Quality Assurance

After the ETL process, we run several automated, rigorous quality assurance tests to establish key parameters of the data. To give a few examples, we conduct tests to:

- Verify that the volume of data has not changed unexpectedly,
- Ensure the data is properly geolocated,
- Confirm the data shares similar patterns to the previous batch of data from that particular supplier.

In addition, StreetLight staff visually and manually reviews key statistics about each data set. If anomalies or flaws are found, the data are reviewed by StreetLight in detail. Any concerns are escalated to our suppliers for further discussion.

## Step 3 - Create Trips and Activities

For any type of data supply, the next step is to group the data into key patterns. For example, for navigation-GPS data, a series of data points whose first time stamp is early in the morning, travels at reasonable speeds for a number of minutes, and then stands still for several minutes, could be grouped into a probable "trip." For LBS data, we follow a similar approach. However, since LBS data continues to ping while the device is at the destination, we see clusters of pings in close proximity at the beginnings and ends of trips.

## Step 4 - Contextualize

Next, StreetLight integrates other "contextual" data sets to add richness and improve accuracy of the mobile data. These include road networks and information like speed limits and directionality, land use data, parcel data, and census data, and more.

For example, a "trip" from a navigation-GPS or LBS device is a series of connected dots. If the traveler turns a corner but the device is only pinging every 10 seconds, then that intersection might be "missed" when all the device's pings are connected to form a complete trip. StreetLight utilizes road network information including speed limits and directionality, to "lock" the trip to the road network. This "locking" process ensures that the complete route of the vehicle is represented, even though discrepancies in ping frequency may occur. Figure 2, below, illustrates this process.

Figure 2: "Unlocked" Trips becoming locked trips.


As another example, if a device that creates LBS data regularly pings on a block with residential land use, and those pings often occur overnight, there is a high probability that the owner of the device owner lives on that block/block group. This allows us to associate "home-based" trips and a "likely home location" to that device. In addition, we can append distribution of income and other demographics for residents of that census block to that device. That device can then "carry" that distribution everywhere else it goes. (Our demographic data sources for the US are the Census and American Community Surveys. In Canada, our source is Manifold Data.) This allows us to normalize the LBS sample to the population, and to add richness to analytics of travelers such as trip purpose and demographics.

## Step 5 - More Quality Assurance

After patterns and context are established, additional automatic quality assurance tests are conducted to flag patterns that appear suspicious or unusual. For example, if a trip appears to start at 50 miles per hour in the middle of a four-lane highway, that start is flagged as "bad." Flagged trips and activities are not deleted from databases altogether, but they are filtered out from StreetLight InSight queries and Metrics.

## Step 6 - Normalize

Next, the data is normalized along several different parameters to create the StreetLight Index. As all data suppliers change their sample size regularly (usually increasing it), monthly normalization occurs.

For LBS devices, we perform a population-level normalization for each month of data. For each census block, StreetLight measures the number of devices in that sample that appear
to live there, and makes a ratio to the total population that are reported to live there. A device from a census block that has 1,000 residents and 200 StreetLight devices will be scaled differently everywhere in comparison to a device from a census block that has 1,000 residents and 500 StreetLight devices. Thus, the StreetLight Index for LBS data is normalized to adjust for any population sampling bias. It is not yet "expanded" to estimate the actual flow of travel.

For navigation-GPS trips, StreetLight uses a set of public loop counters at certain highway locations to measure the change in trip activity each month. Then it compares this ratio to the ratio of trips at the location, and normalizes appropriately. In addition, StreetLight systemically performs adjustments to best estimate total, normalized trips based on external calibration points. Such calibration points include public, high-quality vehicle count sensors (for example, those in PEMs systems, or the TMAS repository) as well as reports from surveys and other externally validated sources. Thus, the StreetLight Index for GPS data is normalized to adjust for change in our sample size. It is not normalized for population sampling bias (because we cannot infer home blocks for GPS data). This is one of the reasons we recommend LBS data for all personal travel analytics. The StreetLight Index for GPS data is not yet "expanded" to estimate the actual flow of travel.

## Step 7 - Store Clean Data in Secure Data Repository

After being made into patterns, checked for quality assurance, normalized, and contextualized, the data is stored in a proprietary format. This enables extremely efficient responses to queries via the StreetLight InSight platform. By the time the data reaches this step, it takes up less than 5\% of the initial space of the data before ETL. However, no information has been lost, and contextual richness has been added.

## Step 8 - Aggregate in Response to Queries

Whenever a user runs a Metric query via StreetLight InSight, our platform automatically pulls the relevant trips from the data repository and aggregates the results. For example, if a user wants to know the share of trips from Origin Zone A to Destination Zone B vs. Destination Zone C during September 2017, they specify these parameters in StreetLight InSight. Trips that originated in Origin Zone A and ended in either Destination Zone B or Destination C during September 2017 will be pulled from the data repositories, aggregated appropriately, and organized into the desired Metrics.

Results always describe aggregate behavior, never the behavior of individuals.

## Step 9 - Final Metric Quality Assurance

Before delivering results to the user, final Metric quality assurance steps are automatically performed. First, StreetLight InSight determines if the analysis zones are appropriate. If they
are nonviable polygon shapes, outside of the coverage area (for example, in an ocean) or too small (for example, analyzing trips that end at a single household) the Zone will be flagged for review. If a Metric returns a result with too few trips or activities to be statistically valid or to protect privacy, the result will be flagged. When results are flagged, StreetLight's support team personally reviews the results to determine if they are appropriate to deliver from a statistical/privacy perspective. The support team then personally discusses the best next steps with the user.

In general, StreetLight InSight response time varies according to the size and complexity of the user's query. Some runs take two seconds. Some take two minutes. Some take several hours. Users receive email notifications when longer projects are complete, and they can also monitor progress within StreetLight InSight. Results can be viewed as interactive maps and charts within the platform, or downloaded as CSV and shapefiles to be used in other tools.

## Measuring Sample Size

StreetLight's Big Data resources include about 65M devices in the US and Canada, which covers approximately $23 \%$ of these countries' combined adult population. However, clients should not expect a $23 \%$ penetration rate for all StreetLight InSight analyses they run. Penetration rates for individual analyses can range from as small as $1 \%$ to as large as $35 \%$.

As is the case with any Big Data provider, sample size and penetration rate for a given analysis depend on the specific parameters used in the study. The reason is that some data are useful for certain analyses, but are not useful for others. For example, a device may deliver high-quality, clean location data for one study, but messy, unusable location data or no data at all - for another. Efficiently identifying the data that are "useful" for a particular analysis is a critical component of the data science value that differentiates StreetLight Data. Because penetration rates vary, sample sizes are automatically provided for almost all StreetLight InSight analyses ${ }^{1}$. This allows users to calculate penetration rates and to better evaluate the representativeness of the sample. Sample size values also are

[^5]useful to clients who wish to normalize StreetLight InSight results through additional statistical analysis.

For LBS analyses, sample size is currently provided as the number of unique devices and/or number of trips for LBS analyses, depending on the type of analysis. These values should be thought of as most similar to "person trips." Including both the number of devices and trips for all LBS analyses is in our product roadmap. Sample size is provided as number of trips for navigation-GPS analyses. These should be thought of as "vehicle trips."

In general, though not always, the trip sample size for commercial navigation-GPS data will be higher than the device (truck) sample size. Commercial trucks that are in active use typically take many trips per week that are often on set routes; thus, they are more likely to have up-to-date fleet management tools, and that means they are more likely to be included in StreetLight's navigation-GPS data set. Trucks that are more rarely used are less likely to be included in the data set.

In general, though not always, the trip sample size for LBS data will be lower than the device (person) sample size. The reason is that not all devices in StreetLight's database capture every single trip perfectly. To illustrate, consider this hypothetical example:

- 8:00AM: Device creates location data at expected home location
- 2:00PM: Device creates location data at sports arena

This device has created useful information for analyzing the home locations of visitors to the arena. However, since the device didn't create any location data on the trip to arena, perhaps because it was off, then the route taken and the travel time cannot be calculated with certainty. As result, it could not be used in an analysis of road activity on an arterial near the arena.

As another example, consider a device that generates regular pings for each trip taken over 10 days. However, the user deletes the smart phone app that created that data, and it stops pinging. That device then disappears for the last 20 days of the month. The device's data can still be used, but the trip penetration for the month is only $33 \%$ of this person's trips, not 100\%.

Typical daily trip penetration rates are between 1 and $5 \%$ of all trips on any one specific day. StreetLight's pricing and data structure encourage looking at many days of data. The costs are the same for analyzing an average day across three months and analyzing a single day. Thus, we encourage clients to evaluate the total sample across the entire study period instead of focusing on per-day penetration rates.

# AGREEMENT FOR PROFESSIONAL SERVICES BETWEEN <br> VHB ENGINEERING NC, P.C AND TOWN OF SOUTHERN SHORES, NORTH CAROLINA FOR <br> GRANT APPLICATION ASSISTANCE BUILDING RESILIENT INFRASTRUCTURE AND COMMUNITIES (BRIC) 

## VHB CONTRACT NO. 85028.21

August 25, 2021
This Contract includes details of the services to be performed, timing of the services, and compensation for the abovereferenced project. This Contract is subject to the attached Terms and Conditions, which contain the general terms of the engagement between the Town of Southern Shores, North Carolina, hereinafter called the "Client," and VHB Engineering NC, P.C. (VHB).

## PART I

## PROJECT DESCRIPTION

NC 12 through the Town of Southern Shores and the Town of Duck experiences regular flooding from rainwater runoff. In 2006, VHB completed the NC 12 Drainage Study in cooperation with the Client, the Town of Duck, and NCDOT, to address potential solutions to flooding throughout the roadway corridor. Since that time, the Client has implemented some of the recommendations, but several areas have not been improved and remain subject to regular flooding. The Client now intends to pursue funding through the Building Resilient Infrastructure and Communities (BRIC) program to implement additional improvements identified in the 2006 report as a comprehensive corridor hazard mitigation project. The BRIC program is administered by the Federal Emergency Management Agency (FEMA)and coordinated through the North Carolina Hazard Mitigation Office.

This Contract details the Scope of Services, Schedule, and Compensation for VHB to assist the Client with development and submittal of a BRIC application. The application will require pre-design level of refinement of the initial concepts included in the 2006 report in order to develop construction cost estimates, address potential right-of-way impacts, address grading and drainage issues, and confirm environmental compliance and permitting requirements. However, the preliminary engineering, final design, construction documents, environmental compliance documents and permitting of the drainage projects will be accomplished by subsequent Contract Amendment pending the actual grant award.

## SCOPE OF SERVICES

In order to assist the Client with the BRIC funding application, VHB will undertake the following scope of services:

### 1.0 LETTER OF INTEREST

To initiate the BRIC application process, the Client will need to submit to the North Carolina Hazard Mitigation a Letter of Interest (LOI) by October 1, 2021. VHB will provide the Client with a project description narrative, vicinity map, concept plans, construction cost estimate, benefit/cost assessment, and other supporting information for inclusion in the LOI to be completed by the Client and submitted by the Client on Town letterhead.

A state-level decision on the LOI will be made by October 15. Should the Town's project be included in the statelevel effort moving forward, VHB will undertake the following tasks.

### 2.0 PRE-DESIGN PLANS

Based on available Geographic Information Systems (GIS) data and the initial improvement concepts developed by VHB in the 2006 report, VHB will develop pre-design drawings to show improvements at the following locations (it should be noted that the Client has previously implemented the 2006 recommendations at East Dogwood Trail):

- Southern Shores Realty
- Edge drain infiltration system with a drainage inlet that will allow for use of a portable pump
- Skyline Road
- Infiltration swales adjacent to intersection
- Ocean Boulevard/Duck Road Split
- Reconstruct the multi-use path and construct infiltration swales with drainage inlets and subsurface infiltration system (French drain system)
- Fourth Avenue
- Construct swales within the NC 12 right-of-way
- Sea Oats Trail
- Edge drain infiltration system


## Right-of-way

VHB will utilize available GIS parcel boundary data to identify likely needs for private property easements to accommodate the proposed improvements. Actual development of easement exhibits and plats will be accomplished as part of final design under a contract amendment pending award of grant funds.

## Construction cost estimate

Based on the pre-design plans, VHB will develop a preliminary opinion of probable construction cost. The primary purpose of the cost opinion will be for use in pursuing project funding. The opinion of cost to be developed by VHB will include individual estimates for each improvement location along with a total project cost encompassing all of the locations; this will form the basis for the requested BRIC funds.

### 3.0 BRIC APPLICATION

The BRIC application uses an online application as part of the FEMA GO program. The Client will need to add VHB as a user in the Client's FEMA GO system. This will allow VHB to develop a BRIC application for approval and submittal by the Client to the state no later than November 24, 2021. Following this submittal, the State Hazard Mitigation Officer will review the submittal and offer comments prior to resubmittal no later than January 7, 2022. Based on state-level review and comment, this scope includes one round of revisions by VHB to the online BRIC application. VHB anticipates that the funding application will include the following elements:

- A revised project narrative describing the project history, elements, and anticipated benefits. The narrative will respond to the funding solicitation guidance and program goals.
- The pre-design plans and cost estimate developed during the previous task.
- A revised benefit/cost analysis using the benefit/cost tool included in the program guidance.
- Mapping and other support information previously provided as part of the LOI.
- Identification of likely environmental compliance and permitting requirements.


### 4.0 COORDINATION AND MEETINGS

During development of the LOI and BRIC application, VHB will coordinate our efforts with the Client and the State Hazard Mitigation Officer. To review plan progress and solicit input in developing the funding application, VHB will conduct regular Teams meetings. Assuming a Notice to Proceed on September 7, 2021, this Agreement includes four coordination meetings prior to the November 24 submittal to the state, and one additional meeting prior to the January 7, 2022 final submittal.

## SCHEDULE

VHB will begin the work included in this scope of service upon approval of this Agreement. Consistent with the BRIC funding program, VHB will complete the work in accordance with the following schedule milestones:

- Letter of Interest

October 1, 2021

- BRIC application

November 24, 2021

- Final application January 7, 2022


## SERVICES NOT INCLUDED

The following services are not anticipated and, therefore, not included in this Agreement at this time:

- Topographic and boundary survey;
- Subsurface utility locating;
- Geotechnical investigations;
- Final plans for the proposed improvements;
- Permitting of the proposed improvements;
- ALTA survey;
- Traffic or safety data collection or studies;
- Field surveys of threatened and endangered species;
- Cultural resource surveys;
- National Environmental Policy Act (NEPA) documentation;
- $\quad$ Subsurface testing for hazardous materials;
- Variance, special use, or conditional use permit requests or rezoning assistance;
- Design of public or private utility relocations.


## COMPENSATION AND PAYMENT FOR VHB SERVICES

## I. Fees and Reimbursable Expenses

VHB will complete the Scope of Services described herein for the Lump Sum Fee of $\$ 25,000$, which includes labor costs and expenses such as: printing and reprographics; travel and subsistence; computer charges; telephone charges; shipping, postage, and courier service charges; purchase of maps and similar documents; etc. These direct expenses will be billed at cost.

## VHB Engineering NC, P.C., AUTHORIZATION

By: $\qquad$

Title: $\qquad$

Date: $\qquad$

## CLIENT AUTHORIZATION

The Town of Southern Shores, North Carolina, agrees with Part I, which includes the Scope of Services, Schedule, and Compensation, and Part II, which includes the Terms and Conditions of our Agreement. Together they constitute the entire Agreement between VHB Engineering NC, P.C., and the Town of Southern Shores.

TOWN OF SOUTHERN SHORES, NORTH CAROLINA
$B y:$ $\qquad$

Title: $\qquad$

Date: $\qquad$

Town of Southern Shores

## Budget Amendment Number \# 12



Explanation: The cost to apply for FEMA BRIC Grant

## Recommended By:

Approved By:

Tom Bennett, Mayor

Date


[^0]:    Lumen Package selection codes identify approximate light output only. Actual lumen output levels vary depending on CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values

[^1]:    www.p65warnings.ca.gov

[^2]:    * Attach supporting documentation and twelve copies of the site plan.

[^3]:    *Lumen Package selection codes identify approximate light output only. Actual lumen output levels vary depending on CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values

[^4]:    Sheila Kane, Town Clerk

[^5]:    ${ }^{1}$ Sample sizes are not automatically provided for Visitor Home-Work, AADT, or Traffic Diagnostics Projects. They are available by request. These analyses use a very large volume of location data, so providing sample sizes automatically via StreetLight InSight would negatively impact data processing speeds.

