



# CITY OF POQUOSON

OFFICE OF THE CITY MANAGER

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March 28, 2021

**TO:** City Council

**FROM:** Randy Wheeler, City Manager

**SUBJECT:** Consideration of Draft Letter to York County Pertaining To The Proposed Lambs Creek Dredging Project.

Attached you will find for your consideration a draft letter prepared at the request of Mayor Helsel to Chairperson Noll of the York County Board of Supervisors. The purpose of the letter is to convey the current position of City of Poquoson as it relates to the proposed dredging of Lambs Creek. Additionally, you will find attached two memos received from York County referencing the proposed dredging of Lambs Creek.



# CITY OF POQUOSON

OFFICE OF THE MAYOR

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To: Mrs. Sheila S. Noll, Chairperson York County Board of Supervisors  
224 Ballard Street, Yorktown, VA 23690

From: Gordon Helsel, Mayor

Date: March 29, 2022

Subject: Lamb's Creek Dredging

Please accept my thanks to you and to Mr. Morgan for hosting our recent coordination meeting. I found the meeting to be very productive and look forward to additional meetings of this type in the future. As part of the meeting we discussed the proposed Lamb's Creek dredging project and the need for the City Council to officially communicate its position on this possible joint project to the Board of Supervisors.

We sincerely appreciate the work that Mr. Morgan and his team have already put into developing the project concept. The City Council has reviewed the original materials prepared by York County Engineer Ms. Anna Drake in 2015 as well as the updated project concept and budget provided by Mr. Morgan in October of last year. The Council also has reviewed information and materials submitted from a number of citizen from both of our communities who are interested in seeing this project move forward.

For the purpose of moving forward with the consideration of this potential joint project the City Council at its March 28, 2022 meeting expressed its preliminary support for the original project scope presented in Ms. Drake's memorandum of January 26, 2015 to be funded through a Special Service District Tax Overlay District. Council concurs with the special tax district participation threshold of at least 80% of the identified special district property owners expressing support for the inclusion of their property in the special tax district as a condition of this project moving forward.

It is my understanding that following receipt of the City's position that it is your intention to schedule a work session with the Board of Supervisors. Should the Board wish to move forward with the next stage of consideration after its work session, the City Manager will work closely with Mr. Morgan and his team to disseminate a survey to potentially impacted property owners to ascertain their position with regard to the inclusion of their property in a special tax district. Should the participation threshold be met in each of the respective communities the City stands ready to work with York County to prepare a Joint Project Agreement for formal consideration by both bodies which it would provide the necessary framework to move this project through engineering, permitting and project completion, including one maintenance dredge.

I look forward to hearing from you with regard to next steps following the Board of Supervisors work session.

# County of York

## Memorandum

DATE: January 26, 2015 - Revised Mar and April 2015

TO: Brian Woodward, Interim Director Environmental Services  
Joseph Brogan, Chief of Stormwater

FROM: Anna Drake/Stormwater Division, Engineer II

SUBJECT: Feasibility Report for Dredging of Lambs Creek

In response to your request to investigate the feasibility of dredging Lambs Creek, I offer the following information:

### History:

1972-74: The upstream portion of Lambs Creek (approximately 1470-feet) was dredged to form a manmade canal from a meandering stream surrounded by wetlands – see composite aerial photograph dated 1969. Lambs Creek appears to have been dredged simultaneously or prior to the construction of the residential subdivision on the east bank of Lambs Creek in Poquoson. As of today's date, I cannot find any record of permits that were obtained.

1988: A Joint Permit Application (JPA) was submitted by Old Port Cove, Inc. for 1800-feet of maintenance dredge and 2100-feet of new dredging (both 30-foot wide channels) while the Old Port Cove subdivision was under development. The request was presented to the York County Wetlands Board; many residents protested the application and the request was denied. Subsequently, the VMRC and the ACOE also denied the application based on the York County Wetlands Board action.

1995: A JPA was submitted by two residents of Old Port Cove for 1200-feet of maintenance dredge and 2400-feet of new dredging (both 30-foot channels). The application stated it was a "community project". The project was determined to NOT require a York County wetlands permit and the ACOE issued an Abbreviated Standard Permit for dredging. However, the application was inactivated by VMRC. The contractor for the project confirmed the dredging was never done or permitted.

### Existing Conditions and Assumptions:

Kevin Pankoke, of KP Marine Construction, helped me obtain approximate water depths (soundings) by using the depth finder on his boat on December 17<sup>th</sup>, 2014. According to the NOAA real-time tide gage, tides were running approximately 0.65 foot high or 7.8 inches higher than predicated and 0.98 feet higher than Mean Lower Low Water (MLLW). The soundings I

have taken were adjusted to MLLW as is customary for navigation. The quantities I have computed are based on these preliminary soundings.

On December 17<sup>th</sup>, the upstream limit of navigability was at 408 Chinquapin Orchard and that obtained only by lifting the outboard engine. I have no soundings upstream of that address. For the purpose of this memorandum and simplicity, I will assume six inches of water depth at the upstream limits of Lambs Creek although that may be too conservative. I have photographs that suggest that even the most upstream limits of Lambs Creek do not ebb dry. A bathymetric survey performed by a licensed surveyor is required and is necessary to accurately determine the water depth, limits of dredging and associated costs.

The depth of the proposed dredge cut must be determined by the use and the controlling water depths outside the area to be dredged. The VMRC and the ACOE will not allow dredging to depths deeper than the nearest channel because it can create stagnant conditions that can lead to decreased oxygen levels, unpleasant odors and degradation of marine resources. The controlling water depth is approximately in the vicinity of 203 Lambs Rest Lane where there appears to be 3.5 feet of water depth at low tide. I have assumed the County will perform zonation dredging which means as we move up Lambs Creek, the depth of the cut will decrease. The boats that I saw in the upper reaches of the canal would require 18" of water depth at low tide. I have been directed to provide 24" of water at low tide with 6" overdraft in the most upstream area of Lambs Creek.

3½' Cut: Three-foot depth at low tide with 6" overdredge

3' Cut: Two and one half-feet depth at low tide with 6" overdredge

2½" Cut: Two feet depth at low tide with 6" over dredge

The previous dredging applications requested 3-1/2' of water depth and 30-foot channels throughout; however, since 1995 many boatlifts and piers have been constructed that constrict the width of the upper reaches of the channel. The dredge must be accomplished without undermining the adjacent bulkheads and riprap and without structurally compromising the boatlifts and piers. It is conceivable that a permit to dredge to three-foot depth could be acquired, but the cost of the project may increase significantly if repairing bulkheads, boathouses and piers were added.

I have also been advised by the regulatory agencies that we could request up to one-foot overdredge, termed "advanced maintenance dredge", to reduce the frequency of benthic disturbance from maintenance dredging; however, the figures supplied are based on only 6" of overdredge. It is appropriate and expedient to apply for a permit incorporating maintenance dredging. Lambs Creek has a northeast orientation so is susceptible to accretion during nor'easters. The City of Virginia Beach requests a 16 year cycle with two maintenance dredges. To reduce the cost of the project, I have been directed to reduce the maintenance dredge cycle to one time at year 12. I have performed a straight line interpolation of cost and volume to be dredging. In the 40-years that the upper reach of Lambs Creek has been dredged, approximately

2.5-feet of sediment has accumulated. A design consultant specializing in dredging would determine the appropriate maintenance dredge cycle for Lambs Creek and the cost of the maintenance dredge should be considered part of the project.

In the wider parts of Lambs Creek I had assumed a 40-foot channel would be dredged in order to allow safe passage of two boats on plane; however, I have reduced that channel width to 30-feet to reduce costs. I have also dropped the ancillary channel width to a 12-foot minimum to further reduce the cost of the project. The survey will provide the design constraints such as distances across the channel from boathouse to boathouse and accurate depths. Dredging less than a twenty-foot channel requires special consideration from the ACOE because of safe navigability concerns. The actual widths of the channel will be dictated by the survey and the ACOE.

### Ancillary and Driveway Channels

There are at least eight ancillary channels that could be dredged, five in Poquoson and three in York County. The three in York County would serve Carpenter Drive and Creek Terrace and Bunting Point Road. The five Poquoson channels would serve the north and south sides of Freemoor Dr., Riggins Court, Dryden Drive, and North Westover Drive. At the request of the City of Poquoson, I have dropped the ancillary channel that would serve the north side of Freemoor Drive

I do not have water depths in the ancillary channels; however, I approximated a cost for the York County and City of Poquoson ancillary channels based on assumptions.

Driveway channels extend from the private piers to the ancillary or main channels, much the same as a driveway extends from a private residence to the public road. The cost of the driveways channels is typically born directly by the private property owners. A rough estimate of the number of driveway channels is undeterminable until public meetings occur. The actual cost of driveway channels is also undeterminable until a bathymetric survey is obtained.

Driveway channels will be needed in the wider parts of Lambs Creek where property owners want channels dredged from their private pier heads to the County dredged channel. Typically, driveway channels are shown on the permit drawings with the municipal channels. Total environmental impacts would include the municipal and driveway channels. Again, the cost of the individual driveways channels are typically the responsibility of the private property owners. The approximate cost for a 12-wide driveway channel is \$320.00 per 10-feet of length.

### Design Constraints:

**Buffers:** In order to prevent slumping of vegetated tidal wetlands into the dredged channels, the cut must be designed with a buffer. The buffer width is four times the depth of the dredge cut (buffer = 4X depth) measured from the edge of the width of the design channel. For example: for a cut 2-feet in depth, an 8-foot buffer from vegetated wetlands must be maintained as is shown on the PowerPoint slide. Please note: the cost approximation does not include any dollar amount

for impacts to vegetated wetlands. I have assumed that vegetated wetlands will be avoided completely since mitigation would drive up the cost at least \$12 for every square foot of impact.

The 4X depth buffer should also be maintained from the toe of bulkheads and riprap structures to prevent undermining of the structures when the toe of the box cut slumps.

Oyster leases: The Attorney General has advised the VMRC to not permit dredge channels through leased shellfish beds without the lease holders' permissions. Attached is a slide showing the shellfish leases in Lambs Creek. Names and addresses of the lease holders are also included.

I contacted the VMRC, specifically Stephanie Iverson, Ben Stagg and Jim Wesson, to determine if any of the leases are being worked commercially. According to the VMRC, there have been no harvest reports from the impacted oyster lease holders between 2007 and 2014. However, besides harvesting, the planting of shell would also indicate that the oyster ground is being worked. Oyster Lease, #6505, which is held by Harold Moore, planted considerable amount of shell in 2004. I will contact Mr. Moore by letter to gauge his level of interest and support for the dredging project. The Department head for Conservation and Replenishment did not recognize any of the leaseholders in Lambs Creek as active aquaculturists and he stated the area is condemned for direct shellfish harvest.

I met with Jim Welteroth, of 300 Chinquapin Orchard on March 25, 2015. Mr. Welteroth has been the community leader regarding this dredge project. He has been in contact with Mr. Moore, the impacted oyster lease holder, and stated Mr. Moore supports the project and would like us to use his property in Poquoson as the dewatering area. Although Mr. Moore has given his verbal support of the project to Mr. Welteroth, I will contact him in writing to ascertain his commitment since his protest, as an oyster lease holder, could delay the project.

Boats are assumed to have an 8-foot beam width and require 18 inches draft at low tide for the purposes of dredging,

### Permits required:

Wetlands Board: Typically, waterfront property owners own the intertidal land all the way to the Mean Low Water (MLW) line. Therefore, if dredging is needed across intertidal areas such as mudflats which are privately owned, then permits from the York and Poquoson Wetlands Boards would be needed. An option would be to obtain York County easements for the intertidal dredge areas since governmental activities in wetlands are exempt. Easements would preclude the need for a local wetlands permit.

Army Corps of Engineers (ACOE): The ACOE has stated this project will require an individual permit (rather than **Regional Permit 2**). Although there are no processing fees associated with permits from the ACOE, mitigation is required for any wetlands impacts. The mitigation ratio would depend upon the value of the wetlands that are impacted. The cost associated for wetlands impacts are \$10 to \$12 per square foot. (ACOE contact – Nancy Hankins) and have not been included in this cost approximation.

Virginia Marine Resources Commission: A permit from the VMRC will be required. The permit application fee is \$100 plus the cost of advertising in a local newspaper. Royalties must also be paid which are, as of 2014, \$0.45 per cubic yard for all new dredging. (VMRC contact - Randy Owen)

Department of Environmental Quality (DEQ) has the authority to require a permit for water bodies on the current effective Total Maximum Daily Load (TMDL) priority list or water body segments with an approved TMDL. For projects on those water bodies, the proposed dredging must not exacerbate the impairment and the dredging must be consistent with the waste load allocation, limit, or condition imposed by an approved TMDL. The pollutant of concern in Lambs Creek, a tributary to the Poquoson River, is fecal coliform which is not typically a concern for dredging projects. There is no reason to believe from a review of aerial photographs and land use that there were ever boat yards or large scale marinas on Lambs Creek that would cause DEQ to require an analysis of the sediment for priority pollutant's such as TBT, hydrocarbons, PCB's and heavy metals. DEQ would only require a permit, if the VMRC and the local Wetlands Boards waived authority and the ACOE issued an individual permit. (DEQ contact – Bert Parolari)

### Cost approximation:

The cost of dredging varies widely mostly due to the cost of dewatering and disposal. For the sake of this preliminary cost estimate, I have assumed \$35.00/cubic yard to dredge and dispose of material at an adjacent property. Contractors and consultants have provided lows from \$20.00/cubic yard to dredge and bring the material to the bank to highs of \$75.00 per cubic yard to dredge and transport the material in water- tight trucks to an off-site disposal area.

|                                 |  |
|---------------------------------|--|
| Engineering costs:              | \$ 75,000 (including post dredge survey) |
| Mobilization:                   | \$ 18,000                                |
| Main Dredge Channel:            | \$ 330,293 based on 9,433 CY             |
| York Ancillary Channels (3)     | \$ 96,702 based on 2,762 CY              |
| Poquoson Ancillary Channels (4) | \$ 73,045 based on 2,087 CY              |
| VMRC Royalties:                 | \$ 6,426                                 |
| Maintenance Dredge:             | \$ 497,002                               |
| <br>                            |  |
| SUBTOTAL:                       | \$1,096,468                              |
| 15% Contingency:                | \$ 164,4703                              |
| <br>                            |  |
| <b>Total Cost:</b>              | <b>\$1,260,938</b>                       |

Driveway channel 12' wide = \$320/10-feet of length

This cost estimate includes contingencies, a rough estimate for York County and City of Poquoson ancillary channels but does not include structural repairs to boathouses, bulkheads, piers etc. This cost estimate does not include any wetlands mitigation costs. Additionally, the

maintenance dredge cycle has been reduced to just once and the width of the main and ancillary channels has been reduced to reduce costs.

### City of Poquoson:

I first spoke by telephone with Ellen Roberts, City Engineer for Poquoson. She stated they have not started any work or studies regarding the dredging of Lambs Creek. She asked to be kept apprised of our intentions and work. She informed me that a 25-lot residential subdivision was approved in the vicinity of the 1995 dewatering and stockpile area (Moore property on Shoreline Drive).

There have been two additional meetings between York County Staff, Administration and Elected Officials and Poquoson Staff, Administration and Elected Officials.

### Community Outreach

Mr. Welteroth is the de-fact community leader. He has contacted most of the affected property owners to gauge their level of interest. He has also organized meetings with citizens.

More public meetings with County and City staff and coordination with the City of Poquoson staff will be necessary to determine the interest in dredging the main, ancillary and driveway channels.

### Dredging Operations

I have assumed the dredging would be accomplished by mechanical means (clam shell dredging) rather than hydraulically. Typically, to mechanically dredge a channel, the contractor will excavate a box cut that is larger than the final design width of the channel. The sides of the cut will slump to a tenable slope (two horizontal to one vertical slope, 2H: 1V). For example: if dredging two-feet of material for a twenty-foot channel, the bottom width of the cut will actually be twenty-four feet to allow for slumping on both sides of the cut. Contractors cannot cut a slope underwater through uncompacted organic and silt material.

Dredging for small boat channels should be no more than one foot deeper than adjacent natural water bodies and only as wide as necessary to safely navigate in order to avoid creating water circulation and flushing problems.

A post-dredging bathymetric survey of the dredged area will be required within 30 days after the completion of the project.

### Dredge Disposal Site

Finding a site to de-water the dredge material and a site to dispose of the dredge material is crucial to the cost and success of the project. The dredge material must be placed in a disposal area which is acceptable to the VMRC, the ACOE and the locality. Dredge material cannot



damage Chesapeake Bay Act buffers or be used to fill wetlands. An erosion and sediment control plan must be prepared and reviewed and approved by the localities. A Land Disturbing Activity permit would have to be acquired for the de-watering site.

Mr. Harold Moore owns a large property in Poquoson that may be suitable for a dewatering site and according to Mr. Welteroth, the property owner is agreeable to use of his property. This property was also the intended dredge dewatering and disposal area for the 1995 application. There are also two possible sites located in York County that could be used.

Much of the cost of dredging is in the dewatering and disposal of material. The choice of a dewatering and disposal site can raise the price per cubic yard significantly. This preliminary cost estimate includes the cost of dewatering and disposal at a nearby property. It does not include transporting material in water tight trucks to an off-site disposal area.

A good dredge spoils site for this project would be at least three acres of relatively flat waterfront land that is already cleared. There must also be a suitable site along the shoreline to mechanically transfer the dredge material from the barge to the dewatering site. Depending upon the type of excavated material, it may be necessary to add flocculants to speed the dewatering process.

### Timeline:

I consulted with contractors, consultants, the regulatory agencies and Phil Roehrs, Water Resources Engineer with the City of Virginia Beach regarding an anticipated timeline for design, permitting and construction. Phil Roehrs heads the neighborhood dredging division. He has also supplied me with a sample Request for Proposals for Engineering Services and sample drawings for a dredge project of similar scope.

Request for Proposals/Interviews/BOS/Contract for Engineering: 3 months

Preliminary Engineering/Public meetings: 18 months

Final Engineering and Design: 4 months

Permitting: 6 months

Invitation for Bids/BOS/Contract for Construction: 3 months

Dredging/ Dewatering/ Stabilization: 12 months

**Total: 46 months**

Please note this timeline does not include any unanticipated logistical challenges that may arise given this project may be a combined effort by the City of Poquoson and County of York.

## Potential Maintenance Dredging of Lambs Creek (Updated – April 2015)

### Project Objective

Dredge approximately 5,300-foot long channel to provide navigability at average low tide. Channel width varies from 24 to 30 feet and dredge depth varies from 6 to 30 inches.

- Potential beginning point: opposite Ocean Breeze Drive

### Cost Estimates

- Total volume of dredged Main Channel = 9,500 cubic yards
- Total volume of dredged Ancillary Channels (3 in York; 4 in Poquoson) = 4,900 cubic yards
- Total volume all channels (1<sup>st</sup> dredge) = 14,400 cubic yards
- Total estimated (preliminary) cost of one-time dredge of Main and Ancillary Channels (\$35/CY) = \$500,000
- Future Maintenance Dredging Estimates (2<sup>nd</sup> cycle)
  - 2<sup>nd</sup> cycle (70% of original volume) = 11,480 CY x \$48 = \$497,000
- TOTAL (2 cycle dredge program) = \$997,000

### Additional Costs

- Engineering - \$75,000
- Mobilization - \$18,000
- Royalties (\$0.45 / CY) = \$6480
- Contingency (15%) = \$165,000

**Grand Total = \$1,261,500**

### Funding Concept

- Funding by creation of Special Service District (SSD) to establish a supplementary tax rate for all waterfront properties fronting dredged channel
- SSD concept is to generate cost recovery during useful life of dredge (based on a modified Virginia Beach model, assume useful life of dredge to be 12 years)
- The channel dredging estimated above would benefit a total of 109 waterfront properties (56 parcels in York / 53 parcels in Poquoson)
  - York – 56 parcels: Total Assessed Value = \$30,362,100

## **Potential Maintenance Dredging of Lambs Creek (Updated – April 2015)**

- Poquoson – 53 parcels: Total Assessed Value = \$26,636,100
- Total assessed value of all 109 properties = \$56,998,200
- Each 1-cent supplement on tax rate would generate \$5,699
  
- Assuming two (2) rounds of maintenance dredging are performed (at year 2 and 12) and cost recovery term is 12), the total estimated cost of \$1,261,500 , would be recovered as follows:
  - 109 benefitting waterfront properties
  - Total assessed value = \$56,998,200
  - Each 1-cent supplement on tax rate would generate \$5,699
  - Annual revenue required to yield \$1,261,500 in 12 years = \$105,125
  - Tax rate supplement required to yield \$105,125 /year = 18.4 cents
  - 18.4 cents supplementary tax rate on \$500,000 assessed value = \$920 in additional annual real estate tax due

### **Participation Threshold**

For purposes of determining whether to move forward with consideration of a project and creation of a Special Service District, the York County Board of Supervisors has tentatively agreed that at least 80% of the waterfront property owners need to be in favor of having a special tax rate supplement applied to their property.

# COUNTY OF YORK

## MEMORANDUM

**DATE:** October 6, 2021

**TO:** York County Board of Supervisors

**FROM:** Neil A. Morgan, County Administrator



**SUBJECT:** Lamb's Creek Dredging Updated Concept

The attached summary report from Public Works updates the cost estimates while retaining the assumptions last provided to the Board of Supervisors in the winter of 2015. County staff has prepared the cost update at the request of the City of Poquoson where the question of possibly dredging Lamb's Creek has re-emerged over the past several months. I am concurrently providing the report to Poquoson City Manager Randy Wheeler. I have also enclosed my 2017 memo which more generically describes how a dredging project such as Lamb's Creek could proceed. There has been no Board policy guidance on Lamb's Creek or any other special district dredging concept since early in 2015 when the Board informally indicated its willingness to partner with Poquoson. No definitive action was ever taken.

In the case of Lamb's Creek dredging in particular, the County's view has long been that it could not take any further steps to canvas residents, or design the project unless the City of Poquoson was also in support. I believe that is still the dynamic that exists. After the City Manager and Poquoson City Council have had an opportunity to further consider this matter, I will let you know if there is a need for the County to once again have a work session and consider this dredging project in detail.

Attachments

## Maintenance Dredging of Lambs Creek

### Project History

In 2015, York County Public Works evaluated dredging approximately 5,800-LF of the main channel in Lambs Creek to provide navigability at average low tide. The dredging width varied from 30 to 24 feet and depth varied from 6 to 30 inches. The beginning point was between 300 Langston Point in York County and Freemoor Drive in Poquoson and ended at The Old Port Cove HOA boat storage yard. The project required co-operation with the City of Poquoson; however, no decision to proceed was made and the project was shelved.

### 2015 Cost Estimates

- Total volume of dredged Main Channel = 9,900 cubic yards
- Total volume of dredged Ancillary Channels (3 in York; 5 in Poquoson) = 5,800 cubic yards
- Total volume all channels (1<sup>st</sup> dredge) = 15,700 cubic yards
- Total estimated (preliminary) cost of one-time dredge of Main and Ancillary Channels (\$35/CY) = \$ 550,000
- Future Maintenance Dredging Estimates (ONE cycle at year 12)
  - (60% of original volume) = 9, 420 CY x \$58 = \$ 547,000
  
- TOTAL (2 cycle dredge program) = \$ 1,097,000

#### Additional Costs

- Engineering - \$75,000
- Mobilization - \$18,000
- VMRC Fees (\$0.45 / CY) = \$ 7061
- Contingency (15%) = \$ 179,309

**Grand Total = \$ 1.4 million (\$1,377,000)**

**Construction costs have risen by around 20% since 2015, so current estimate would be closer to \$ 1.7 million. However, the 2015 cost estimate was developed utilizing multiple assumptions. An accurate cost estimate would require actual design plans and a bathometric survey.**

## Maintenance Dredging of Lambs Creek

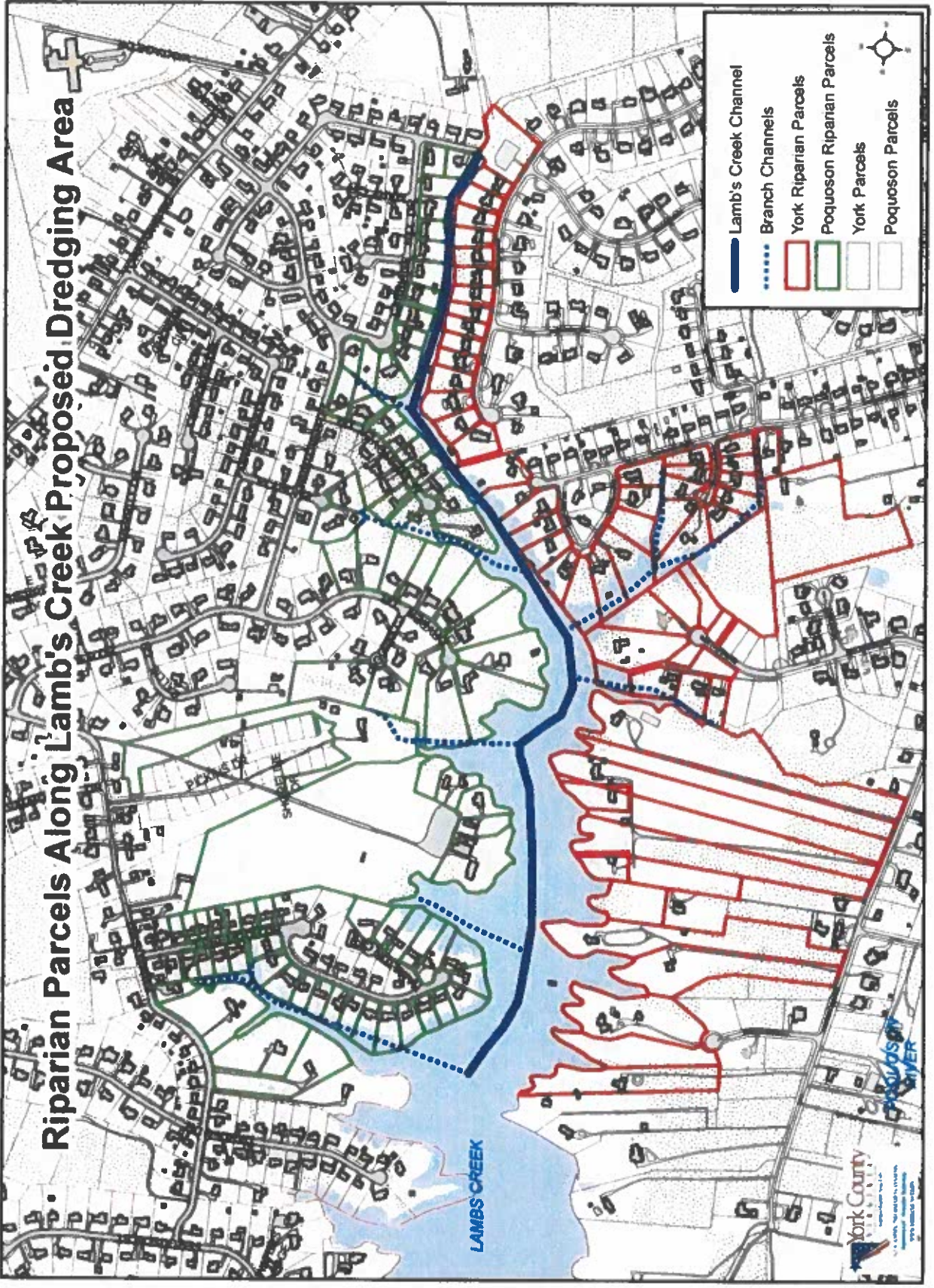
### Funding Concept

- Funding by creation of Special Service District (SSD) to establish a supplementary tax rate for all waterfront properties fronting dredged channel
- SSD concept is to generate cost recovery during useful life of dredge (based on Virginia Beach model, assume useful life of dredge to be 12 years)
- The channel dredging estimated above would benefit a total of 160 waterfront properties (71 parcels in York / 89 parcels in Poquoson)
  - York – 71 parcels: Total Assessed Value = \$40,174,000
  - Poquoson – 81 parcels: Total Assessed Value = \$49,096,100
  - Total assessed value of all 160 properties = \$89,270,100
  - Each 1-cent supplement on tax rate would generate \$8,927
  
- Assuming the life of the project is 12 years and a cost recovery term of 12 years with a total estimated cost of \$1,700,000, cash recovery would be as follows:
  - Annual revenue required to yield \$1,700,000 in 12 years = \$141,700
  - Tax rate supplement required to yield \$141700/\$8927 = 15.9 cents
  - 15.9 cents supplementary tax rate on a property that is in the SSD which is assessed at \$500,000 would equate to an additional \$ 795 in annual real estate tax due.

### Participation Threshold

For purposes of determining whether to move forward with consideration of a project and creation of a Special Service District, the York County Board of Supervisors tentatively discussed that at least 80% of the waterfront property owners would need to be in favor of having a special tax rate supplement applied to their property before imposing the special tax. A parallel decision would be needed by Poquoson City Council concerning the level of support among impacted residents.

# Riparian Parcels Along Lamb's Creek Proposed Dredging Area



# COUNTY OF YORK

## MEMORANDUM

**DATE:** May 17, 2017  
**TO:** York County Board of Supervisors  
**FROM:** Neil A. Morgan, County Administrator  
**SUBJECT:** Dredging



As a follow-up to comments received at the April 18, 2017, Board of Supervisors meeting, staff has compiled information on: previous discussions concerning dredging of waterways to improve navigability; the permitting requirements for dredging operations; the mechanics of dredging operations; probable time lines and costs; and potential funding scenarios, including special taxing districts.

### History

The Board's and staff's most recent discussions concerning dredging were focused on Lamb's Creek and were the result of inquiries from residents of the Olde Port Cove subdivision, which abuts the upper reaches of the creek, approximately 1,500 feet of which was dredged in the early 1970s to convert a meandering stream into a man-made canal. Olde Port Cove, Inc., (the developer of the subdivision) and, subsequently, two residents of the subdivision submitted Joint Permit Applications (JPA) in 1988 and 1995, respectively, proposing maintenance and channel-widening (to 30 feet) dredging. The 1988 application was protested by numerous citizens and was denied by VMRC and the Corps of Engineers. The 1995 application was approved by the Corps but was never pursued by the applicants.

At its January 2015 Retreat, the Board discussed in general terms the concept of dredging and the York County waterways that might be potential candidates for a project (those being: Queens Creek, Wormley Creek, Back Creek, Chisman and Goose Creeks, Patricks Creek, Quarter March Creek, Lambs Creek, and the Poquoson River). A more detailed conceptual assessment was presented for Lambs Creek since Mr. Shepperd was continuing to receive inquiries from residents on both the York and Poquoson sides of the creek who were interested in improved navigability. One concept discussed at that time was the Special Service District (SSD) system enabled by the Code of Virginia and in use in several other localities (e.g., Virginia Beach) wherein a supplementary tax rate is assessed to provide funding for the dredging project. As a result of the Retreat discussion, Mr. Shepperd (Board Chairman at that time) corresponded and met with Poquoson's Mayor, Mr. Hunt, on several occasions; but, ultimately, there was determined to be no interest in pursuing the joint effort or establishment of a SSD, at least at that time.

### Permitting

Multiple agencies may be involved in reviewing and approving permit applications for proposed dredging projects. They are:

Wetlands Boards: Typically, waterfront property owners own the intertidal land all the way to the Mean Low Water (MLW) line. Therefore, if dredging is needed across intertidal areas such as privately owned mudflats, then permits from the appropriate Wetlands Boards would be needed. Alternatively, since governmental activities in wetlands are exempt, if a project were to be



undertaken by the County, and if the County secured easements across privately-owned bottomlands, then a local wetlands permit would not be required.

Army Corps of Engineers (ACOE): The ACOE indicates that projects such as dredging will require an individual permit (rather than **Regional Permit 2**). Although there are no processing fees associated with permits from the ACOE, mitigation is required for any wetlands impacts. The mitigation ratio would depend upon the value of the wetlands that are impacted. The cost of mitigating wetlands impacts through payments to a wetlands “bank” are approximately \$10 to \$12 per square foot of impacted area (source: ACOE contact – Nancy Hankins).

Virginia Marine Resources Commission (VMRC): VMRC requires a permit for any dredging activity in state waters (state bottomlands). The permit application fee is \$100 plus the cost of advertising in a local newspaper. Royalties must also be paid which were, as of 2014, \$0.45 per cubic yard of dredge material removed (source: VMRC contact - Randy Owen). Another factor that VMRC must consider, based on advice from the Attorney General, is to avoid permitting dredge projects that would run through leased shellfish beds unless the leaseholder’s permission has been secured. That could be a factor in the feasibility of dredging in various waterways in the County since there are numerous leasehold areas.

Department of Environmental Quality(DEQ): DEQ has the authority to require a permit for water bodies on the current Effective Total Maximum Daily Load (TMDL) priority list or water body segments with an approved TMDL. For projects on those water bodies, the proposed dredging must not exacerbate the pollution impairment and the dredging must be consistent with the waste load allocation, limit, or condition imposed by an approved TMDL. For example, the pollutant of concern during previous discussions of Lambs Creek, a tributary to the Poquoson River, was fecal coliform, as it could be in other County waterways. More typically of concern for dredging projects would be the current or former presence of boat yards or large scale marinas that could cause DEQ to require an analysis of the sediment for priority pollutant’s such as TBT, hydrocarbons, PCB’s and heavy metals. DEQ would only require a permit in situations where the VMRC and the local Wetlands Boards waived authority and the ACOE issued an individual permit (source: DEQ contact – Bert Parolari).

### **Dredging Operations**

Typically, to mechanically dredge a channel, the contractor will excavate a box cut (i.e., vertical sides and flat bottom) that is larger than the final design width of the channel. The sides of the cut will then slump to a tenable slope (two horizontal to one vertical slope, 2H:1V). For example: if dredging two-feet of material for a twenty-foot channel, the bottom width of the cut will actually be twenty-four feet to allow for slumping on both sides of the cut. This method is accepted practice since it would be impossible for a contractor to cut a slope underwater through uncompacted organic and silt material.

The depth of a proposed dredge cut must be determined based on the proposed use (e.g., recreational vessels vs. commercial vessels) and the channel depth beyond the area to be dredged. Reviewing agencies will evaluate dredging plans to ensure that the proposed channel is only as wide as necessary for the prevalent types of vessels to safely navigate and generally not more than one foot deeper than adjacent natural water bodies in order to avoid creating water circulation and flushing problems that could lead to stagnant conditions, decreased oxygen levels, unpleasant odors, and degradation of marine resources.

Depending on the location and orientation of the waterway, the regulatory agencies may consider proposals for over-dredging – aka “advance maintenance dredge” – in order to extend the benefi-

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cial life of the project. For example, a waterway with a northeast orientation could be more susceptible to accretion and, therefore, an additional 6-inches (the maximum likely to be permitted) of material dredged in the initial effort could be very cost-effective.

To ensure the success and utility of a dredging project serving waterfront residential areas, it would also be necessary to address the "ancillary" channels that might extend from a main channel into small coves as well as the "driveway" channels extending between a main or ancillary channel and individual residential piers/docks. Typically, in a government managed dredging project, the cost of the driveway channels would be the responsibility of the benefitting private property owner.

Dredging of the recreational boating waterways in York County would most likely be accomplished by a clam-shell type excavating machine mounted on a barge (as opposed to hydraulic dredging equipment). Once excavated, the dredge spoil must be transferred to a properly permitted dredge spoils site, ideally within proximity to the subject waterway so as to minimize hauling/transportation costs. Spoils must be dewatered and cannot be deposited in wetlands or in Chesapeake Bay Preservation Areas.

### Timeline

For information on potential time requirements for implementing a project, staff consulted with stakeholders in the industry and with their counterparts in the City of Virginia Beach, which has an established and on-going program and process for dredging "neighborhood" channels. The general consensus was that a typical dredging project would follow a timeline such as the one listed below.

Request for Proposals/Interviews/BOS approval/Contract for Engineering: 3 months

Preliminary Engineering/Public meetings: 18 months

Final Engineering and Design: 4 months

Permitting: 6 months

Invitation for Bids/BOS approval/Contract for Construction: 3 months

Dredging/ Dewatering/ Stabilization: 12 months

**Total: 46 months**

### Costs

Based on our most recent investigation (2015), the cost of dredging varies widely, mostly due to the cost of dewatering and disposal. Contractors and consultants have provided cost estimates ranging from \$20.00/cubic yard to dredge and bring the material to the bank of the waterway being dredged, to a high of \$75.00 per cubic yard to dredge and transport the material in water-tight trucks to an off-site disposal area. Also, and varying significantly among different waterways, would be the cost of dredging the ancillary channels and driveway channels. Looking back to the previously researched dredging concept for Lamb's Creek (5,700 linear feet of channel, 24 feet wide, and 18 inches deep at its upper end), the total estimated cost, including an initial dredge and two subsequent maintenance dredges at years 8 and year 16, was \$2,000,000.

### Funding Options

During previous discussions, two basic funding options were identified:

- general tax dollars; or
- revenue generated through establishment of a Special Service District (i.e., a specifically-defined geographical area in which a supplement on the normal real estate tax rate would be established for a specific purpose and a specific term).

Navigable water certainly contributes to the valuation of waterfront property and increased property values enhance the fiscal condition of the County in general, so some have suggested that dredging of a particular waterway has countywide benefits and should be funded through general county revenues. Conversely, others suggest that the primary benefit of a dredging project accrues to the waterfront property owners who abut the channel that would be made more navigable and that it is those property owners (collectively) who should bear the entire cost, or at least a substantial portion, of the effort.

If dredging projects were to be viewed as a “countywide” responsibility, then it would be appropriate for them to be evaluated and programmed for funding through the annual Capital Improvements Program review process.

If dredging projects were to be viewed as the responsibility of the waterfront property owners, then the authority provided by Section 15.2, Chapter 24, of the Code of Virginia that allows localities to create Special Service Districts (SSD) would be the appropriate funding mechanism. Such a district would have to be established by Ordinance, after notice and public hearing, and the Ordinance would identify the specific boundary of the district, the amount of the supplementary tax rate, and the duration of the obligation.

During its previous consideration of dredging and the SSD concept, the Board discussed the need to have some sort of “threshold of agreement” among the owners whose properties would be included within the boundaries of the district and thus be subject to the supplementary tax rate (a concept similar to the policies in effect for going forward with water and sewer extension projects). The preliminary consensus was that an 80% in-agreement “threshold” would be desirable; however, no formal action was ever taken.

Again, looking back to the Lambs Creek conceptual discussions, it was determined that a supplementary tax rate of \$0.19 would be necessary to recover the \$2,000,000 cost of the dredging project within a 16-year term. Assuming an average \$500,000 assessed value for a waterfront property, that supplement would equate to an additional \$950 per year in real estate tax. Of course, these figures are applicable only to a specific scenario and should be viewed only as an example of how such a system might be structured.

### Summary

In summary, the prospects of dredging neighborhood channels to improve navigability for recreational boating would require extensive research, coordination, public outreach, and funding. The Virginia Beach approach, which was the basis for the proposals developed during discussion of Lambs Creek, provides one, but not the only, example of how a program might be structured.

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Staff stands ready to support and provide input for any future discussions the Board may wish to have on this subject.

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