

# Sewer Advisory Panel Draft Presentation

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- Jeremey Taylor
- Tides Inn representative:  
Marston Smith
- 5/16/22 version

# Interest in Central Sewer Service

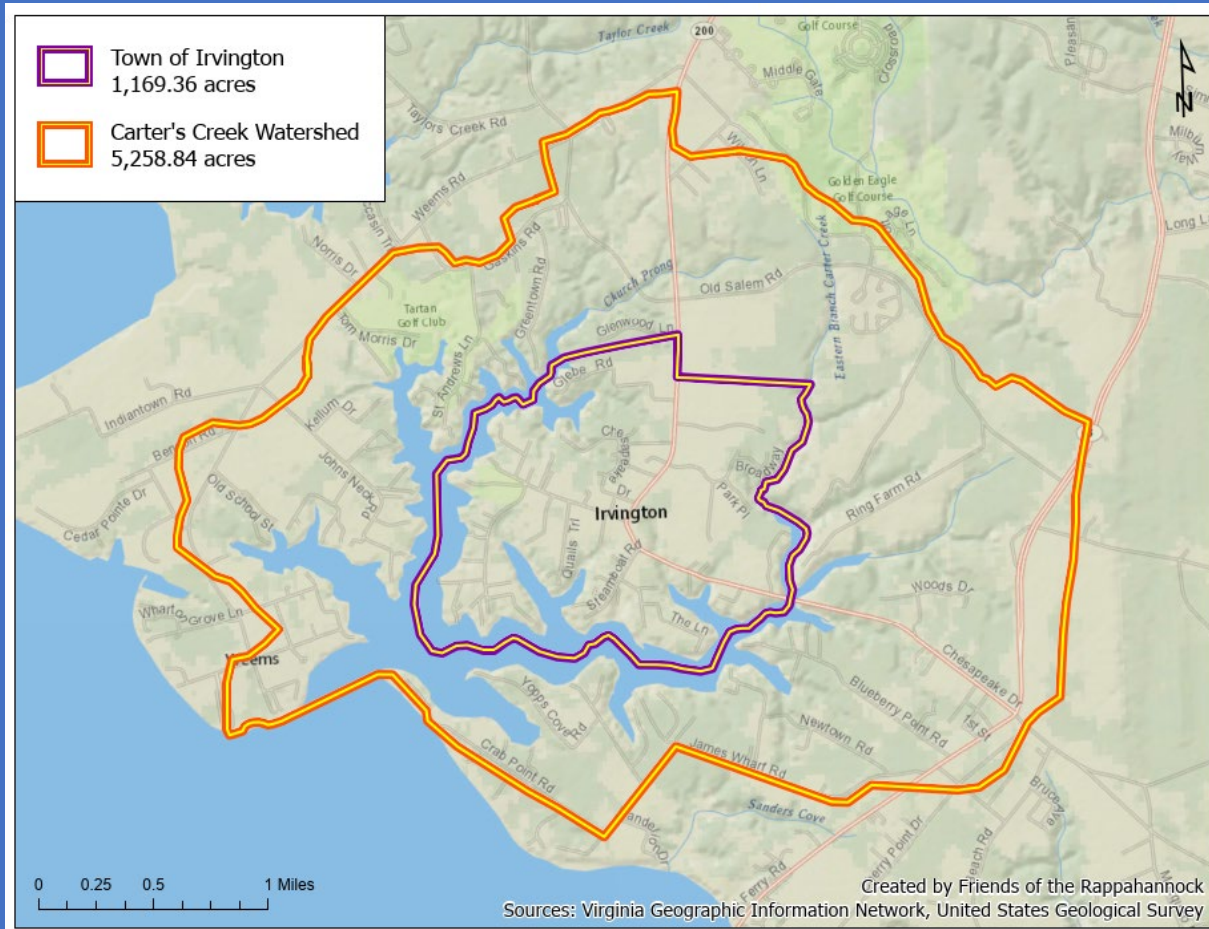
## Business:

- The Tides Inn:
  - Wants to get out of operating wastewater treatment plants
  - Shutting down their treatment plants will likely allow the central branch of Carters Creek to be closed to shellfish harvesting seasonally versus the current year-round.
- ICN/King Carter Holdings:
  - Considers central collection system important to development plans for business district
  - Considers central collection system important to development of Farm Road property
- Vineyard Meadows:
  - Considers central collection system important to future development

## Residential:

- Due to lack of maintenance, poor soil conditions some homeowners have had to replace their existing systems over the years often with advanced systems. Some still have issues in periods of heavy rain.

## Carters Creek Watershed with Irvington's Town Limits



Irvington: 23% of watershed.

Average Elevation:

Irvington: 30 feet

Norfolk: 7 feet

Deltaville: 10 feet

Mathews: 7 feet

# THE LOWER RAPPAHANNOCK REPORT CARD

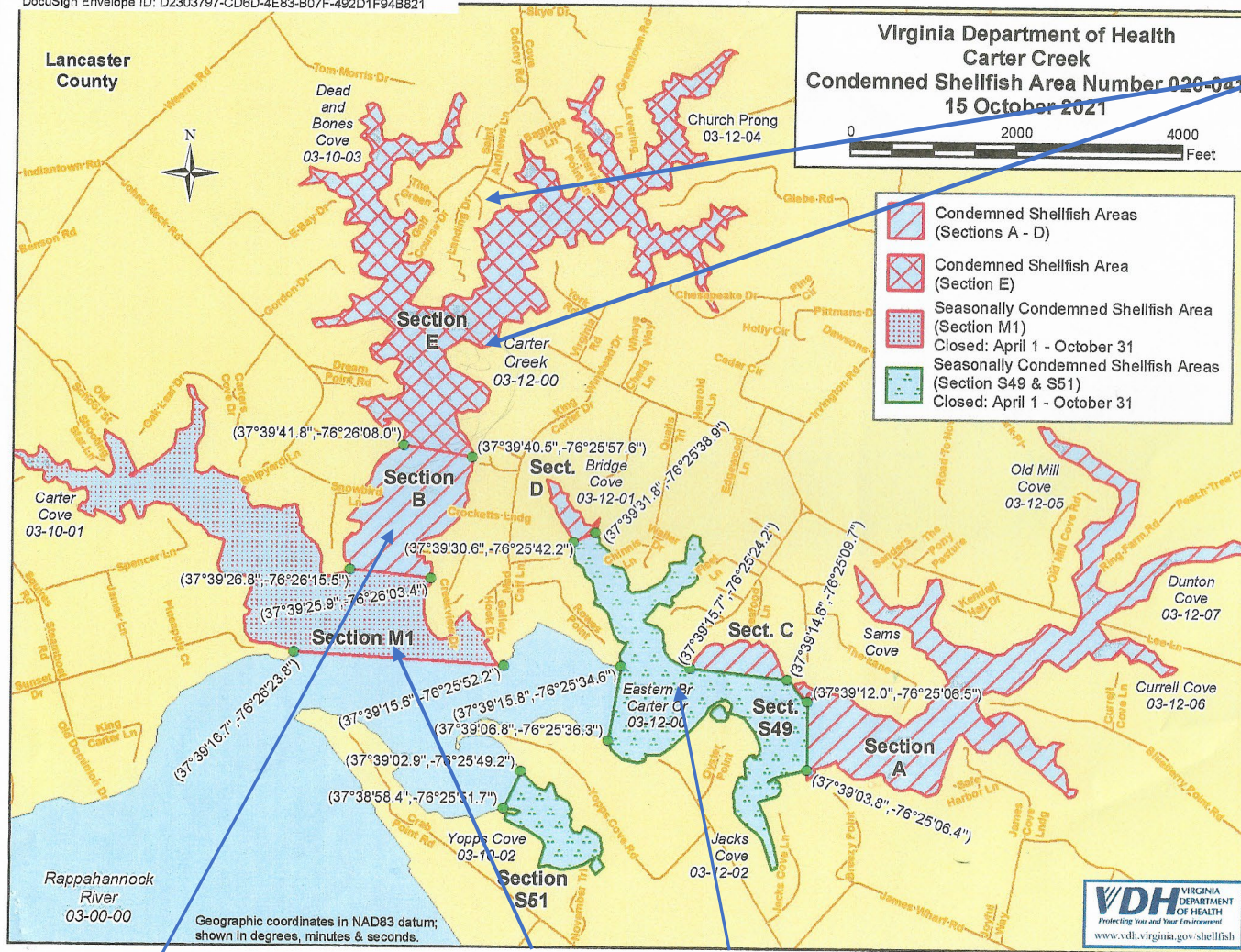
Tributary-Level Results	Carter's Creek Cat Point Creek - Upper Cat Point Creek - Lower Corrotoman - Eastern Corrotoman - Western Corrotoman - Lower Farnham Creek Hoskins Creek Lagrange Creek Lancaster Creek Meacham Creek Mount Landing Creek Occupacia Creek Peedee Creek Piscataway Creek Robinson Creek Totuskey Creek Urbanna Creek																	
Human Health	A	B	C+	B	C	A-	B-	C	B+	B+	B+	B+	A-	B+	B	B+	C+	A+
Land Use	C	D+	B+	C	B-	C-	C	C+	C	B-	C	B-	B-	D+	C+	D	C-	C
Stream Ecology	B-	B	B+	B	B+	B-	B+	B	B-	B	C	A-	B	C+	B	C+	B	B
Estuary Condition	B	C+	D+	D+	C	C	D	D	C-	C-	B	D+	D	D+	D	C	D+	C+
Overall Grade	B	C+	B-	C+	C+	C+	C+	C	C+	B-	B-	B	B-	C+	C+	C+	C	B-

VDH guideline for Swimming is more than 200 CFU/100 ml  
CFU is Colony forming units, the measure of Fecal Coliforms



# Carters Creek: VDH DSS Map

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- Tides Inn Plants Outlets
- The further up the creek you go the less flushing of natural background contamination
- Areas near marinas are always seasonally condemned

5.8/22.6

5.7/21

7.8/36

For year round shellfish harvesting 30 sample avg must be less than 14 CFU/100 ml  
And 90% less than 31 CFU/100 ml



# Irvington Soil Conditions



Sassafras: Depth to  
Water Table

48-72 inches  
Well drained

Wo: Depth to Water  
Table

18-30 inches  
Moderately well  
drained

Dr: Depth to Water  
Table

12—18 inches  
Somewhat poorly  
drained

Certain areas of Irvington, especially along King Carter Drive and areas of Farm Road and Vineyard Meadow have soil conditions where advanced septic systems are now required

# Irvington Septic System History

- Historically Conventional Septic Systems had been permitted in all of Irvington
- In the last shoreline survey by VDH in 2016 only two systems were found deficient
- In the five-year period from 1/17 to 2/22, 31 permits were issued, 10 for new houses, 21 repairs, many repairs were L-3 Systems as were some for new houses.
- Septic System Effluent mg/l (BOD,TSS, TKN)
  - Conventional: 150,80,60
  - TL-3: <10, <10, 30 and disinfection
- Properly designed and maintained Septic Systems do not contaminate Carters Creek with fecal coliforms (VDH, VIMS, EPA)

# Alternatives and Best Guess Capital Costs:

## A. Conventional and AOSS with clustered Decentralized Systems

- EPA endorses these systems as long term treatment alternatives
- Residents continue to operate and maintain their systems
- New and replacement systems installed as needed
  - Conventional system replacement \$8,000
  - Drain field replacement \$4,500
  - AOOS replacement \$30,000

## B. Town Center collection system with treatment by Kilmarnock

- 1.4 mile low pressure force main down KC drive and out RT 200 to town limit with 1.8-mile pumping station to Kilmarnock connection
- Assumes 20 resident connections and ICN/King Carter Holdings and Vineyard Meadows connections by them
- Kilmarnock connection fee estimate \$10,000 and home connection estimate \$2,000
- Best Guess Capital cost: \$2.4 million, range \$2.3 to \$3.2 million

## C. Complete Town collection system with treatment by Kilmarnock

- Estimate 8 miles of low pressure force main through Town with 1.8 miles with pumping station to Kilmarnock connection
- 380 potential connections with assumed 266 actual connections
- Kilmarnock connection fee \$10,000 and home connection \$2,000
- Best Guess Capital cost: \$7.5 million, range \$7.2 to \$9.8 million



# Grant and Loan Capitalization of a Wastewater/Sewer Treatment for Irvington



Irvington will not likely qualify for much if any standard grant funding by the state of Virginia through the Community Development Block Grant (CDBG) program due to the income levels of Irvington residents and lack of blight.



A CDBG planning grant to study and build a long-term plan is applicable but given the ARPA funds on-hand with the Town of Irvington, this would not seem necessary. A complete professional engineering report and cost estimate can be completed with ARPA funds.



All grants require well-laid plans, leveraged investments, relationship development, and time to develop. While Irvington residents and businesses may not qualify for CDBG funding, there are many other federal and private sources of funding. This initial survey was not exhaustive in determining all sources.

Grant  
Capitalization for  
future phases of a  
Wastewater/Sewer  
Treatment  
Infrastructure Plan  
for Irvington

- Irvington ***may qualify*** for other federal infrastructure grants within the latest funding, but applications have not yet opened. ***In order to qualify for **any capital grant**, Irvington must first:***
  - 1. Create and commit to a plan**
    - May include Phases
    - Should be part of comprehensive plan (in which we should show progress and be specific)
  - 2. Take steps to initiate as much as of the plan as is possible with existing revenue opportunities**
    - Meals tax to fund phase 1 for Town Center
  - 3. Seek additional funding for future phases from infrastructure grants *not* tied to low-income areas or blighted communities.**

# Loan Capitalization of a Wastewater/Sewer Treatment for Irvington

<b>Revenue Assumptions for Sewer Capitalization</b>	
<i>Estimate of meals tax basis (total annual sales):</i>	\$ 6,000,000
Standard Meals Tax	2.5%
Meals Tax Revenue for Irvington	\$ 150,000
<b>Financing Capital Costs of Sewer (Option B)</b>	
<i>Assumes 4% cost of funds on a 30-year term</i>	\$ 2,500,000
<i>Annual Principal &amp; Interest Payments</i>	\$ (143,220)
<b>Annual Surplus/(Loss) from Meals Tax and Sewer</b>	<b>\$ 6,780</b>



## Loan Capitalization of a Wastewater/Sewer Treatment for Irvington

Loan capitalization is available through both the EPA and USDA for rural wastewater treatment and sewer installations. Locally, USDA has been the leading partner in financing these facilities for municipalities.

Irvington can clearly finance the installation of a sewer line connected to Kilmarnock for the central (King Carter Drive and Irvington Road) portion of the town; covering both the Town Commons and Restaurant/Hotel Business district with a Meals Tax.

The best local resource for technical assistance with planning and grant applications is the Northern Neck Planning District Commission (NNPDC)



# NorthernNeck.US

Planning the Orderly and Efficient Economic Development of the Northern Neck

## Northern Neck Planning District Commission (NNPDC)

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# Recommended Next Steps

- Discussion with Key Business Stakeholders Prior to Workshop – Complete
- Town Council and Planning Commission Input at Workshop
- RFP for Professional capital cost estimates with engineering – All alternatives including decentralized systems
- Grant Committee continues search for funding
- Survey Results