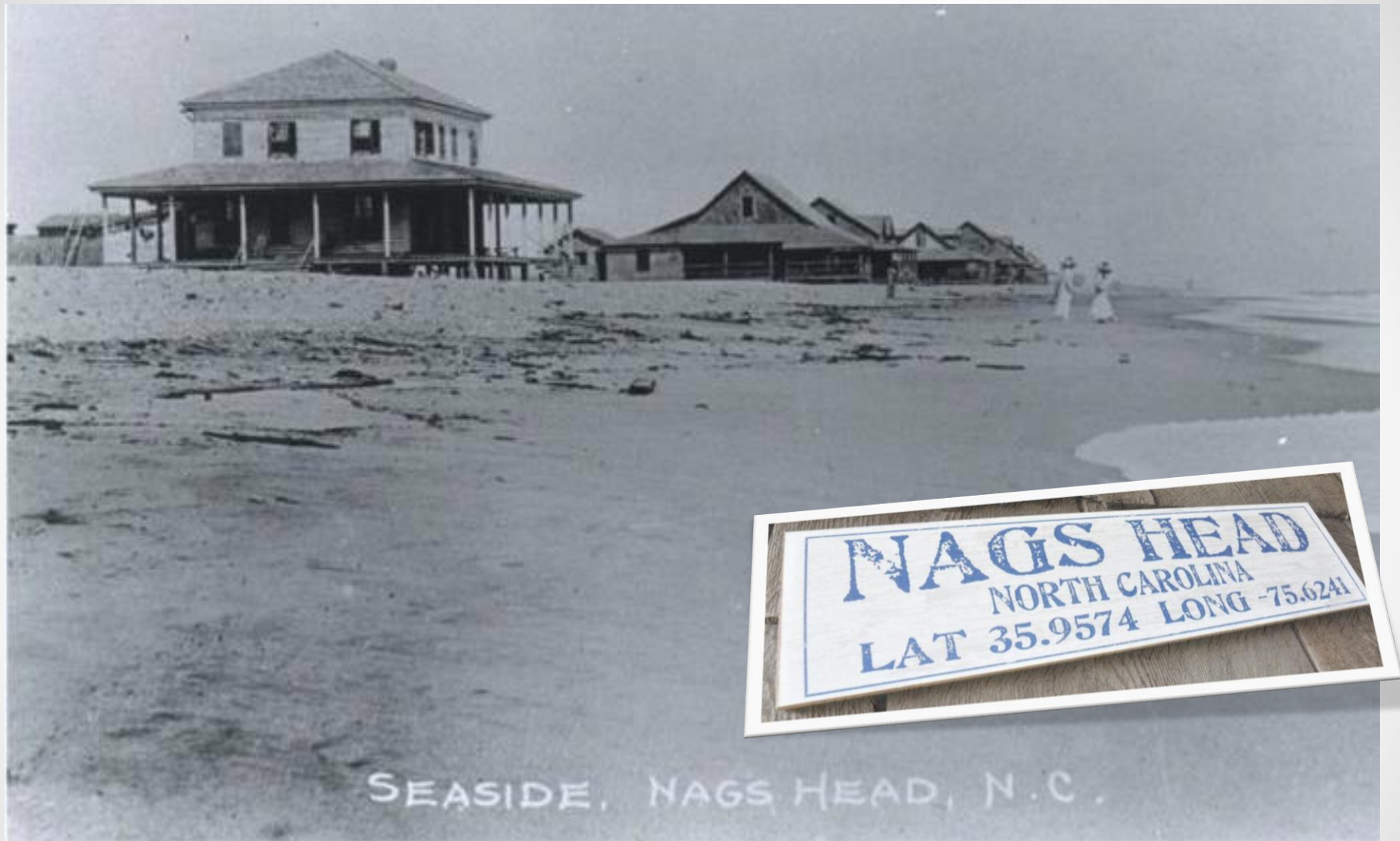


Smarter Critical Systems and Built Environment: Infrastructure Solutions



Todd Krafft
Town of Nags Head

Todd Krafft is the Environmental Planner with the Town of Nags Head's Planning and Development Department where he directs the Septic Health Initiative. In 2000, Todd worked with the NC State University Soil Science Program and Faculty to develop a local onsite wastewater management initiative for the Town. He currently oversees onsite wastewater inspections and maintenance, water quality initiatives, community education efforts and is a certified State Operator for on-site wastewater systems. He also serves as a local permit officer with the Division of Coastal Management's Coastal Area Management Act program and assists with the Town's dune management program. Todd attended Wesley College in Delaware, College of the Albemarle, and served six years of active duty in the United States Air Force



We're certainly beautiful!!!



Town of Nags Head

And we're developed...

90%
developed

50% of
homes 1980
or older



Rising Waters....



Matthew 2016

Septic Health Initiative

85+%

properties
utilize onsite
wastewater

Mid 90's	Committee began meeting on septic health
2000	BOC Adopted Initiative
2005	Decentralized Wastewater Management Plan
2005- (ongoing)	Implementation of plan



Septic Health Initiative

Goals-

- Assist property owners with maintaining their systems
- Reduce Need for Central Sewage
- Improve Quality of Surface and Ground Water by Improving performance of Individual septic Systems



Septic Health Initiative Incentives

1. Inspections
 - Free
2. Repairs/Replacement
 - Non-compounding low interest loans
3. Pump Outs
 - Water credits
4. Education
 - 4. Outreach to community
5. Water Quality (monitoring)
 - Monitor water quality throughout the town



All Types of Systems



Beautiful, but not perfect!



Swimming Advisories

List of News Releases		
Article Name	Article Active	Article Author
Water quality swimming advisory lifted for oceanside site in Onslow County	11/1/2018	P. Smith
Water quality swimming alert lifted for oceanside site in Carteret County	10/23/2018	P. Smith
Water quality swimming alert lifted for sound-side site in Pamlico County	10/19/2018	P. Smith
Water quality swimming advisories lifted for two ocean-side sites in Carteret Co	10/19/2018	P. Smith
Water quality swimming alert issued for sound-side site in Pamlico County	10/18/2018	P. Smith
Water quality advisories and alerts lifted for five coastal swimming sites; four	10/17/2018	P. Smith
Water quality swimming notifications issued for eight sites in Carteret, Onslow	10/16/2018	P. Smith
Water quality swimming alerts lifted for ocean-side sites in Brunswick County	10/13/2018	P. Smith
Water quality swimming alerts lifted for ocean-side sites in Oak Island	10/11/2018	P. Smith
Water quality swimming alerts issued for three ocean-side sites in Brunswick Cou	10/11/2018	P. Smith
Precautionary swimming advisory lifted for Bald Head Island, alerts issued in Oa	10/10/2018	P. Smith
Water quality swimming advisory lifted for sound-side site in Carteret County	10/9/2018	P. Smith
Precautionary advisory lifted for most swimming sites in coastal waters followin	10/5/2018	E. Bryan-Millush
Swimming advisory lifted for most ocean sites in Brunswick County, alert lifted	10/2/2018	P. Smith
Precautionary advisory lifted for swimming sites on Ocracoke Island	9/29/2018	P. Smith
Precautionary advisory lifted for ocean swimming sites in New Hanover County	9/29/2018	P. Smith
Precautionary advisory lifted for most ocean swimming sites in Carteret, Pender,	9/28/2018	E. Bryan-Millush
Bacteria testing shows swimming sites in Dare, Currituck counties meet	9/24/2018	P. Smith

N.C. Division of Marine Fisheries • 3441 Arendell Street • Morehead City, NC 28557 • 252-726-7021 or 800-682-2632

Signs Used in Posting Advisories

More Information

For more information about the recreational water quality and testing program, contact J.D. Potts or Erin Bryan-Millush at (252) 726-6827, or e-mail them at the following addresses:
j.d.potts@ncdenr.gov or
erin.bryan-millush@ncdenr.gov

Recreational Water Quality Monitoring Program
 Shellfish Sanitation and Recreational Water Quality Section
 P.O. Box 769
 Morehead City, NC 28557
 (252) 726-6827
<http://www.deh.ncr.state.nc.us/shellfish/index.htm>

Testing results and posting information can be viewed on-line at the http address above.

NCDENR
 Michael F. Easley, Governor
 William G. Ross Jr., Secretary

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OFFICE OF THE STATE HEALTH DIRECTOR

North Carolina Recreational Water Quality Monitoring Program

N.C. Department of Environment and Natural Health Division of Environmental Health

Shellfish Sanitation and Recreational Water Quality Section
 (252) 726-6827
<http://www.deh.ncr.state.nc.us/shellfish/index.htm>



Current Status

- Average 200-300 inspections annually
- Average 50-100 pump outs annually
- Approx. Lending- \$230,000(2013-current)



What have we learned?

- Many systems are over used- increased occupancy
- Average failure rate 22 years
- Tanks need to be pumped more frequently based on use
- More use of water control fixtures
- Septic tank filters work (2002)
- Elevated groundwater for longer periods of time



Planning

Adaptation Planning in the Town of Nags Head: Vulnerability, Consequences, Adaptation, Planning Scenarios (VCAPS) Report



Photo by Matt Luck

August 2017



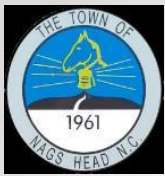
TOWN OF Nags Head NORTH CAROLINA



Comprehensive Plan

July 5, 2017





Stormwater Planning Process

Water Quality

Disconnect upstream runoff from point discharges and use natural systems for treatment

Low Impact Development

Address runoff at the source by way of Low Impact Development applications & policy development

Flood Control

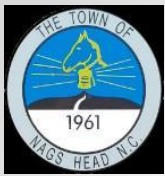
Employ groundwater lowering to create additional natural storage to mitigate peak flow

Maintenance

Active maintenance program through routine & remedial maintenance

Funding

Cooperative Efforts- Via cost share agreements with state agencies and grant sources



Flood Control

Minimizing downstream effects of stormwater runoff



Water Quality

Reducing pollutants loads on our waterbodies



Natural Landscape

Encouraging vegetation preservation



Preserve Open Space

Maintain valuable features and function via conservation



Reduce Hardscapes

Through compact design and reduced impervious surfaces



Functional

Sustainable stormwater management



Cost-Effective

Flexibility with availability of low-cost practices

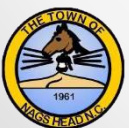


Character

Distinctive and attractive community landscapes

Groundwater Lowering





Questions



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June 12, 2019 •