Revitalizing Aging Neighborhoods in Virginia Beach

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Disclaimer

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Honor Pledge

On my honor as a student, I have neither given nor received aid on this assignment.

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List of Acronyms

AMI- Area Median Income

APZ- Accident Potential Zones

CDBG- Community Development Block Grant

CEA- Strategic Code Enforcement Area

DHNP- Virginia Beach Department of Housing and Neighborhood Preservation

HUD- US Department of Housing and Neighborhood Preservation

OORP- Owner Occupied Rehabilitation Program

SGA- Strategic Growth Area

SSD- Special Service Districts

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Executive Summary

Virginia Beach's housing stock is rapidly aging. As of 2016, roughly half of Virginia Beach's single-family housing stock was 40 years or older which makes those homes, and surrounding neighborhoods, more vulnerable to neighborhood decline and disinvestment. Many of these older homes are concentrated along the I-264 corridor within ¾ of a mile from strategic growth areas known as the Strategic Code Enforcement Area (CEA). Homes the CEA are older, more likely to have a code violation, and are lower income than the rest of Virginia Beach.

A successful neighborhood quality intervention requires a definition of neighborhood quality, an understanding of the locality's housing stock, and an understanding of current programs available. Code enforcement violations are often used as a proxy for neighborhood quality in addition to other factors including crime, school quality, and income levels (Needs Assessment, 2016). Virginia Beach is a predominantly single-family home locality with most owner-occupied units as opposed to renters. Current programs to address aging homes include a small subsidy program and robust code enforcement program.

In order to prevent future neighborhood, decline and disinvestment among aging homes, Virginia Beach's Department of Housing and Neighborhood Preservation could enact the following interventions:

1. Expand the Subsidy Program and Code Enforcement (Social Service Model)
2. Change the Property Tax Rate (Split Rate Taxation)
3. Institute a Rehabilitation Tax Exemption for Homes within the Code Enforcement Area

Each alternative was judged using a combination of cost, effectiveness, cost-effectiveness, feasibility and sustainability criteria. After completing individual assessments, each alternative compared relative to the other.

After a thorough analysis, **I recommend that DHNP should choose Option 1: Expand the Subsidy Program and Code Enforcement Operations (Social Service Model).** DHNP should utilize its current structure and find innovative funding streams to double its subsidy program and increase code enforcement efforts within the CEA by 10 percent. While this option is more expensive than the alternatives and has an insecure funding stream, it does provide the most home improvements at a moderate cost over 15 years.

Introduction and Problem Statement

Virginia Beach experienced most of its development between the 1970s and 80s when the City experienced a population boom. A little more than half of Virginia Beach's housing stock was built between the 1980s and 1970s with a quarter built during the 1960s or before. The other quarter of the housing stock was built after 1990 (Annual Assessment Report, 2019) With development remaining relatively constant since the 1990s, however, a majority of Virginia Beach's current housing stock currently consists of older, single family homes. This is a significant concern for Virginia Beach since a higher percentage of older homes often means more code violations, less attractive housing properties, and lower City revenues.

Neighborhoods near Strategic Growth Areas are of particular concern because of their high concentration of older homes. Seventy percent of investor-owned properties in Strategic Growth Areas had at least one code violation between 2011 and 2017 (Needs Assessment, 2016). Since the potential risk for housing stock vulnerabilities is increasing, there is an opportunity for the City of Virginia Beach to intervene in preventing neighborhood decline in the future. **As of 2016, roughly half of Virginia Beach's single-family housing stock was 40 years or older which makes those homes, and surrounding neighborhoods, more vulnerable to neighborhood decline and disinvestment.**

Background

In order to recommend potential interventions, it is essential to understand the factors that play into aging homes and code violations. The following section provides context on how other localities are thinking about neighborhood quality, the current Code Enforcement Area (CEA), Virginia Beach's housing profile, and current subsidy and code enforcement programs.

Measuring Neighborhood Quality

Neighborhood quality is often an ambiguous term that is difficult to measure. How a locality measures targeted areas for redevelopment, however, has a direct impact on the scope and type of redevelopment a locality decides to undertake.

Several factors can be used to measure neighborhood quality including the price of the home, poverty level of the household, transportation infrastructure, crime levels, and historic housing prices. Neighborhood quality measurements often involve a neighborhood distress score using census block groups to approximate neighborhoods. Some localities may measure neighborhood quality in terms of code violations cited within a specific period of time (Needs Assessment, 2016). This is how Virginia Beach currently measures neighborhood quality. Other important factors to measure neighborhood quality include home ownership rates compared to absentee (renter) ownership, and the number of properties sold in a year (Holzer, 2017). Using the scorecard and other factors frames neighborhood quality as a social and economic problem, rather than just one of physical blight. This social and economic framing addresses the underlying factors that contribute to poor home maintenance including income security of the home, motivating local governments and nonprofits to act (Jennings, 2012).

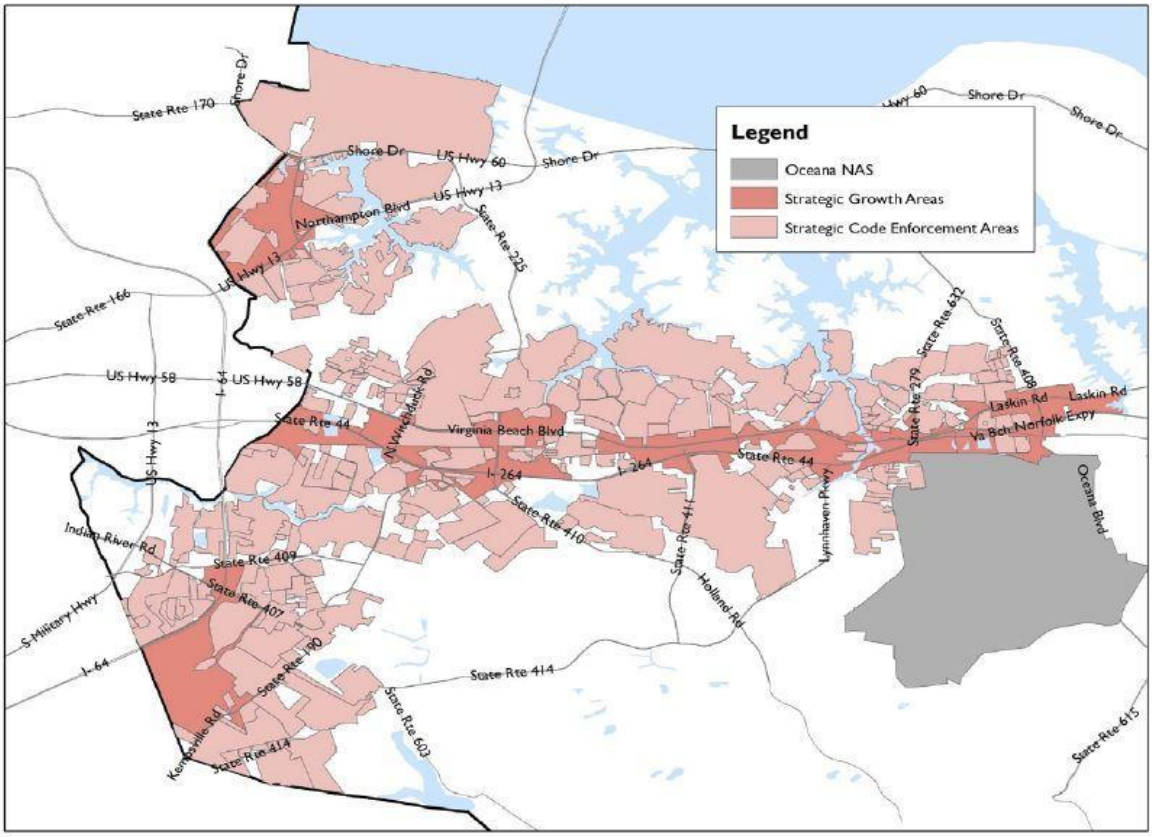
When conducting a neighborhood quality analysis, analysts should measure neighborhoods against the average condition of the city as opposed to the region (Newell, 2009). By creating a city baseline for city projects, it is easier to evaluate how policy options affect various stakeholders. It is important to note, however, that neighborhood quality scores do not necessarily create good policies, but aid practitioners in where to focus their resources (Jennings, 2012). Size is another important factor since the marginal effect of rehabilitation projects tend to increase with size (Ding et. al, 2010). Since this project focuses on rehabilitation projects specifically, it is important to consider the scale of the project in determining net benefits of a proposal. Smaller scale projects tend to be less effective at increasing property values and maintaining increase in property values.

Defining the Code Enforcement Area

The 2016 Virginia Beach Housing Needs Assessment identified an area along the City's Strategic Growth Areas as Strategic Code Enforcement and Redevelopment Areas (CEA). Figure 1 illustrates where these CEA areas are located in relation to the rest of the city. These proposed areas are within ¾ of a mile from the Strategic Growth Areas and are currently used by the Virginia Beach Planning Department to target redevelopment. Since 70% of these properties outside the SGAs had

at least one code violation since 2011, they are ideal for further targeted code enforcement interventions (Needs Assessment, 2016).

Figure 1: Suggested Strategic Code Enforcement Area (CEA)



(Needs Assessment, 2016)

The Housing Landscape in Virginia Beach

While Virginia Beach does not currently struggle with widespread absentee land ownership, vacant properties and massive neighborhood blight, the city's increasingly older homes and growing low income/elderly population are significant risk factors to blight and absentee ownership in the future. In order for Virginia Beach to make appropriate interventions, it is important to get a comprehensive understanding of its housing stock since the effectiveness of interventions depends on several factors including the percentage of homeowners, household income, number of code violations, and number of building permits.

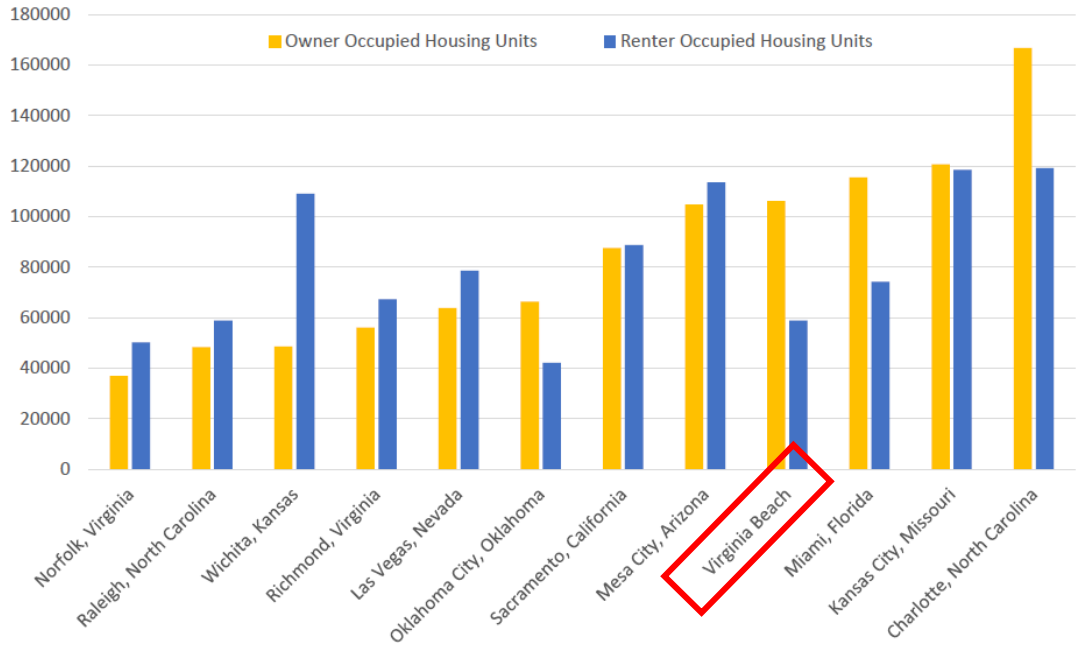
Homeowners v. Renters

Housing interventions can impact homeowners and renters differently. One intervention that positively impacts owner-occupied units can negatively impact renter-occupied units. Even if an intervention assists both owner-occupied and renter households, the type of intervention might make one more likely to utilize a program than another. Some research on tax increment financing, where localities leverage the expected future growth of a project to attract current investment found

that property value increases from the redevelopment benefited landlords but negatively impacted renters (Newell, 2009).

Virginia Beach is a predominantly owner-occupied city with roughly two thirds of the population owning a single-family home (Needs Assessment, 2016). While renters make up a lesser portion of the housing stock, the number of renters and subsequent absentee landlords has grown over the last couple years (Needs Assessment, 2016). The largest concentrations of rental properties are along the Oceanfront area and I-264 corridor (US Census, 2017).

Figure 2: National Comparison of Owner-Occupied v. Renter Housing Units



(Needs Assessment, 2016)

Roughly two thirds of Virginia Beach's housing stock are owner-occupied, single family homes. As Figure 2 illustrates, Virginia Beach has significantly more owner-occupied residents compared to other Virginia cities including Norfolk and Richmond. Localities that include similar percentages of owner-occupied units include Oklahoma City, Miami, and Charlotte. Since roughly two-thirds of households are owner occupied, it is important to consider how an intervention will work in a primarily owner-occupied setting. Figure 3 offers a more granular breakdown of the City's housing stock with in the CEA according to house type and occupation type.

Figure 3: CEA Housing Stock by Type and Occupation

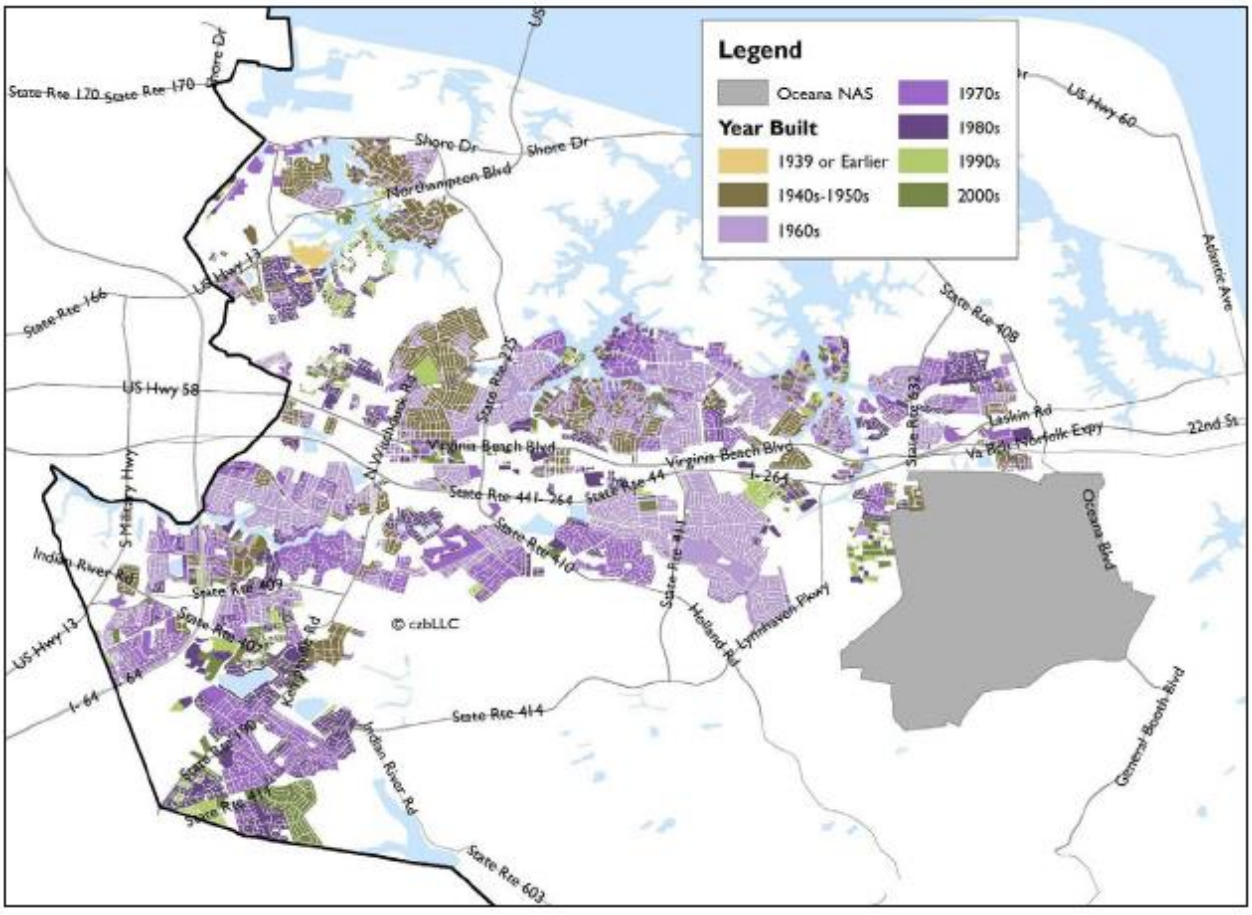
Structure Type	Occupation Type
75% single family homes (43,900 parcels) 22% townhouses (13,170 parcels)	82% owner-occupied (46,300 parcels) 18% investor-owned (10,000 parcels) - 5,875 landlord in Virginia Beach - 4,186 absentee landlord (outside of Virginia Beach)

Created Using: (Needs Assessment, 2016)

Age of Homes

Since Virginia Beach primarily developed from north to south, most of the older housing in Virginia Beach is concentrated in the center of the city near Virginia Beach Boulevard and the Virginia Beach Norfolk Expressway. Figure 4 illustrates where older homes are located throughout the City with the purple color representing homes that are 60-40 years old. A majority of homes near the CEA were built between 1960 and 1980. The southern portion of the city, up until the green line, is more recent development and is thus not included in this map.

Figure 4: Households by Decade Built

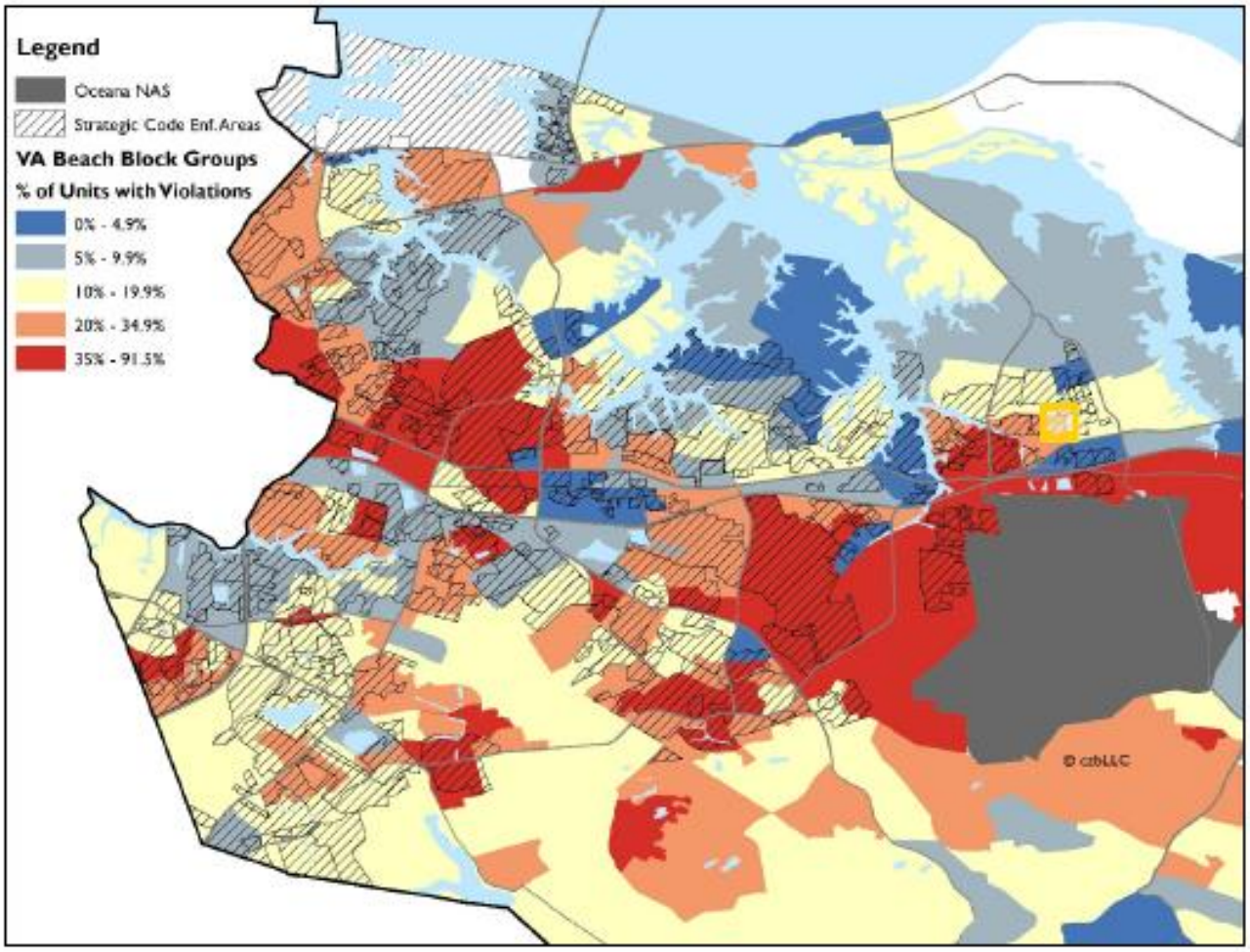


(Needs Assessment, 2016)

Code Violations

Each year the Code Enforcement Division cites roughly 25,000 building and property code violations. Most of these violations are concentrated within the northern part of Virginia Beach within the CEA. As Figure 5 illustrates, a significant portion of CEA census tracts exhibited significant numbers of code violations. Of particular concern is the number of code violations among investor-owned properties. Roughly 70 percent of these properties had at least one code violation between 2011 and 2016. 40 percent of single-family homes had at least one code violation between 2011 and 2016 (Needs Assessment, 2016).

Figure 5: Percent of Units with Code Violations, CEA



(Needs Assessment, 2016)

Building Permits

The number of building permits a neighborhood has can be an indication of the quality of the neighborhood. If residents are submitting building permits it means that they are taking the necessary steps to make their homes more marketable and valuable int eh future. The Planning Department keeps track of building permit data and separates residential properties from commercial ones. Residential property data includes electrical, building, elevator, fire, gas, mechanical, plumbing, and utility permits for both single family and multi-family dwellings. As of 2018, roughly 16,800 residential building permits are conducted annually (VB OpenData, 2019)

Current Aging Neighborhood Assistance/Prevention Programs

DHNP's mission is "to create quality solutions that expand housing opportunities, promote vibrant, well-maintained neighborhoods and make homelessness rare, brief and nonrecurring." (About us, 2019). As part of its mission to promote vibrant and well-maintained neighborhoods, Virginia Beach currently offers several home repair grant and loan to assist low-income residents.

These include emergency housing assistance, home rehabilitation assistance, and mobile home rehabilitation assistance.

Owner Occupied Rehabilitation Program (OORP)

The Owner-Occupied Rehabilitation Program (OORP) provides emergency housing assistance, home rehabilitation assistance, and mobile home rehabilitation assistance for existing or imminent housing safety concerns. Residents must be low- and medium-income homeowners as defined annually by HUD. If someone cannot afford their repair and is below 80% of the Area Median Income (AMI), they can qualify for a rehabilitation grant up to $10,000. For repairs that cost more than $10,000, residents can contract a loan with the City to be paid over 20 years (Owner Occupied Rehab Program (OORP), 2019). As of April 18, 2018, the income limits were as follows:

Figure 6: Owner Occupied Rehabilitation Program Income Limits 2018-2019

Number in Household	1	2	3	4	5	6	7	8
80% AMI	$42,000	$48,000	$54,000	$60,000	$64,800	$69,600	$74,400	$79,200

Income guidelines effective as of April 18, 2018

(OORP, 2019)

Eligible emergency activities include air conditioning and heating at designated times, well replacement, faulty electrical replacement, roof/ceiling repair, fireplace defects, and sewer repairs. Eligible rehabilitation activities include weatherization, correction of exterior and interior code violations, and removal of unsafe conditions. Ineligible activities include cosmetic repairs, mold remediation, and replacement of detached structures (OORP, 2019). Based on conversations with DHNP staff, the department assists roughly 45 households annually with home repairs.

Code Enforcement

Virginia Beach's residential code enforcement currently utilizes a combination of complaint response, inspector patrols, and systematic exterior inspections to enforce the Virginia Maintenance Code (Building Maintenance Inspections, 2019). DHNP's Code Enforcement Division is responsible for ensuring all residential and commercial properties are up to state and city code. The division's staff includes roughly 28 positions including housing inspectors, compliance officers and specialists. They are responsible for conducting citywide patrol inspections, responding to citizen complaints, granting certificates of compliance for rental properties, and issuing code violations (Operating Budget: DHNP, 2018).

Each year the code enforcement division addresses approximately 9,800 building violations and over 25,000 property violations (Housing Property and Condition Survey, 2018). Building maintenance inspections evaluate exterior and interior home violations while property maintenance violations survey the entire property. Routine code enforcement plays a critical role in maintaining the quality of Virginia Beach neighborhoods. Common code violations by category are listed below:

*Figure 7: Code Violations by Category and Type**

Building Maintenance Violations		Property Maintenance Violations
Exterior Violations	Paint peeling and rotted wood Siding in disrepair Fence in disrepair Shed in disrepair Gutter in disrepair Roofing/drainage in disrepair Broken Window	Overgrown grass/weeds Accumulation of trash and garbage Open storage of junk Waste management Inoperable vehicle Commercial vehicles parked in residential or apartment districts Parking and storage of recreational equipment Poor swimming pool, spa and hot tub maintenance
Interior Violations	Damaged interior wall Electrical hazard Damaged plumbing Improper Venting Trip hazards Water Damage	
Unsafe Buildings	Vacant or unsecure buildings need to be secured from casual entry within 48 hours.	

Created Using: Housing and Property Conditions Survey, 2018)
**excludes non-building/housing categories including waste removal, red-tag, and inoperable vehicles*

In addition to the homeowner inspections, code enforcement also conducts certificate of compliance inspections for landowners in designated Rental Inspection Districts. If rental units within these districts have no code violations, they are given a Certificate of Compliance exempting them from a rental inspection for four years.

The division routinely conducts a housing quality survey to measure the quality of each neighborhood. Structures are randomly selected and their condition is evaluated as either standard, deficient, deteriorated, or dilapidated as displayed in Figure 8. The 2018 Neighborhood Quality Survey used a random sampling of over 10,000 residential properties to evaluate the condition of their homes using the scale above. In addition to the individual structures, code enforcement also evaluated the surrounding area to document any property maintenance violations. Of the 10,000 homes surveyed, 86 percent had no building code violations and 75 percent had no property or building violations (Housing and Property Conditions Survey, 2018).

Figure 8: Neighborhood Quality Categorizations

Standard	Structures with no exterior deficiencies; not a single defect; zero building maintenance code violations
Deficient	Structures with minor defects/ can easily be corrected (ex. peeling paint)
Deteriorated	Structures with defects of greater severity that are not normally repaired in the course of regular maintenance (ex. rotted window frames)
Dilapidated	Structures that fail to meet minimum standards for human habitation; endanger the health or safety of occupants; contain one or more critical defects (ex. structural collapse)

Created Using: (Housing and Property Conditions Survey, 2018

Methodology

The purpose of this report is to determine how DHNP, in conjunction with other departments and officials, can increase the number of home improvements for an aging housing stock. The rest of this report outlines the criteria used to evaluate each alternative, the potential interventions, explores the tradeoffs associated with each alternative, and provides a final recommendation. The first section outlines how each alternative is evaluated based on its cost, effectiveness, cost effectiveness, political feasibility, and sustainability. The potential interventions include a description of the alternative, how the intervention fares relative to the above criteria, and a summary of the alternative and evaluation. After outlining the various options, the outcomes matrix summarizes the relative advantages and disadvantages of each alternative. The last section includes a final recommendation and suggestions for implementation moving forward. Additional resources including cost assumptions and further CEA characteristics are included in the appendices.

Evaluative Criteria

In order to determine how DHNP can best address aging homes and promote future neighborhood quality, it is important to compare the relative advantages and disadvantages of each alternative. Important factors to consider include the cost of the intervention, who bears the cost, the program's effectiveness, whether it can be implemented, and how long the program will last. The following criteria will be used to evaluate each alternative relative to each other:

Cost- total costs over 15 years
Effectiveness- number of home improvements
Cost Effectiveness-dollars spent home improvement
Feasibility- political and administrative capacity
Sustainability- longevity of program

Cost (Total $ Over 15 Years)

What are the administrative and program costs associated with each alternative? What is the annual cost of the program in dollars? How are the costs distributed among stakeholders?

Program Costs

Program costs include the personnel and resources needed to implement a particular program. These costs include employee salaries, office space, and resources for day to day business operations. If the alternative does not hire new staff, personnel costs account for productivity losses from giving current employees more assignments. Relevant program costs include money needed for rehabilitation subsidies, the cost of materials to fix homes, or the extra gas and vehicles needed to increase code enforcement depending on the alternative. Costs are projected out over a 15-year time period and discounted to today's current value.

Home Improvement (Outcome) Costs

Costs also include the personnel, application, and processing costs associated with each additional home improvement. Since most home improvements require a building permit, the costs associated with each outcome are approximated using building permit costs.

Cost Burden by Stakeholder

Each alternative breaks down costs by who bears the cost of the program. The breakdown includes key stakeholders such as the local government, local residents, and CEA residents.

Effectiveness

How effective is each alternative at serving qualifying homeowners and increasing the number of home improvements (i.e. building permits or addressed code violations)?

Effectiveness Measure (# of home improvements)

Various factors contribute to neighborhood quality including exterior housing quality, resources, crime rates, and household income. While a myriad of factors contributes to neighborhood quality, this analysis uses the number increased annual home improvements as a proxy for neighborhood quality. While maintaining property values and property revenue is often the primary justification for government intervention, home improvements and investments in the form of building permits and code violations serve as a proxy increased value in the future.

Development within CEA (unlikely, likely, very likely)

This criterion also considers how likely those improvements will be located in the CEA. Home improvements are measured in terms of number of improvements and the likelihood of improvements in the CEA is measured in terms of unlikely, likely, and very likely.

Cost Effectiveness ($/Home Improvement)

How effective is each alternative compared to how much the intervention costs? What is the cost per home improvement created?

An intervention may be very effective but have substantial costs that impede successful implementation. This criterion weighs how successful a program is at increasing the number of building permits relative to the resources needed to implement the program.

Feasibility (unlikely, moderate, likely)

What political and administrative resources are needed to implement the alternative? How likely is it that the alternative will be implemented?

Political feasibility hinges primarily on how much autonomy DHNP has in implementing the program and on whether City Council approval is required for an intervention. DHNP has some internal control over funding allocations but any option related to the tax code or exemptions would require City Council approval or inter-departmental support. This metric determines how likely the current City Council would approve an alternative. When evaluating political feasibility, it is also important to consider whether the alternative impacts some districts disproportionately to others.

Sustainability and Longevity (limited, moderate, extensive)

How long will the program be implemented? Will the program require limited, moderate, or extensive resources to continue?

An important factor to consider is the sustainability of each program. This criterion measures potential threats to program continuation. If federal grants primarily fund the alternative, the longevity of the program could be called into question since HUD funds can vary from year to year. If an alternative is a legal change, like changing the land/building property tax, that alternative could be longer lasting. Alternatives with time limits may have longevity limitations but could create sustainable outcomes during the program's existence.

Potential Interventions

Option 1: Expand Subsidy Program and Code Enforcement (Social Service Model)

Addressing Unmet Need in the Community through Subsidies

Current code enforcement efforts and subsidy programs provide enforcement and relief for vulnerable families but there is currently a gap in care. Using the OOCRP's 2018-19 guidelines as a benchmark, roughly 16,868 households are eligible to participate in the OORP program based on HUD 2018 income limits (HUD income limits, 2018 VB OpenData, 2019). While not every eligible homeowner will request a subsidy, the growing number of potential code violations in combination with a growing senior population, more cost-burdened households, and more low-income residents, could mean an increase in OORP requests in the future. In order to keep up with potential demand, DHNP might need to increase their grant and loan budget to accommodate either more expensive rehabilitation projects or to serve more residents. While DHNP has little control over qualifying rehabilitation projects, it does have autonomy over the maximum grant amount awarded to each household.

Since the number of aging homes and cost-burdened households is growing, DHNP could increase the capacity of its current rehabilitation subsidy program through more funding. DHNP could get more funding for the rehabilitation program by either increasing the amount of city funds, applying for more HUD dollars in the annual action plan, or partnering with nonprofits and businesses. By increasing funding for rehabilitation grants, DHNP could either increase the number of families served or the grant amount per household depending on the greatest need. Currently, all of the OORP funding is provided by HUD's Community Development Block Grant (CDBG) program. The City only provides funding for Homeless Services through the Housing Resource Center. In order to leverage more funds that are not dependent on federal regulations, DHNP could partner with the private homeless fundraising entity VB Home Now to set aside money for smaller redevelopment projects to supplement federal funding.

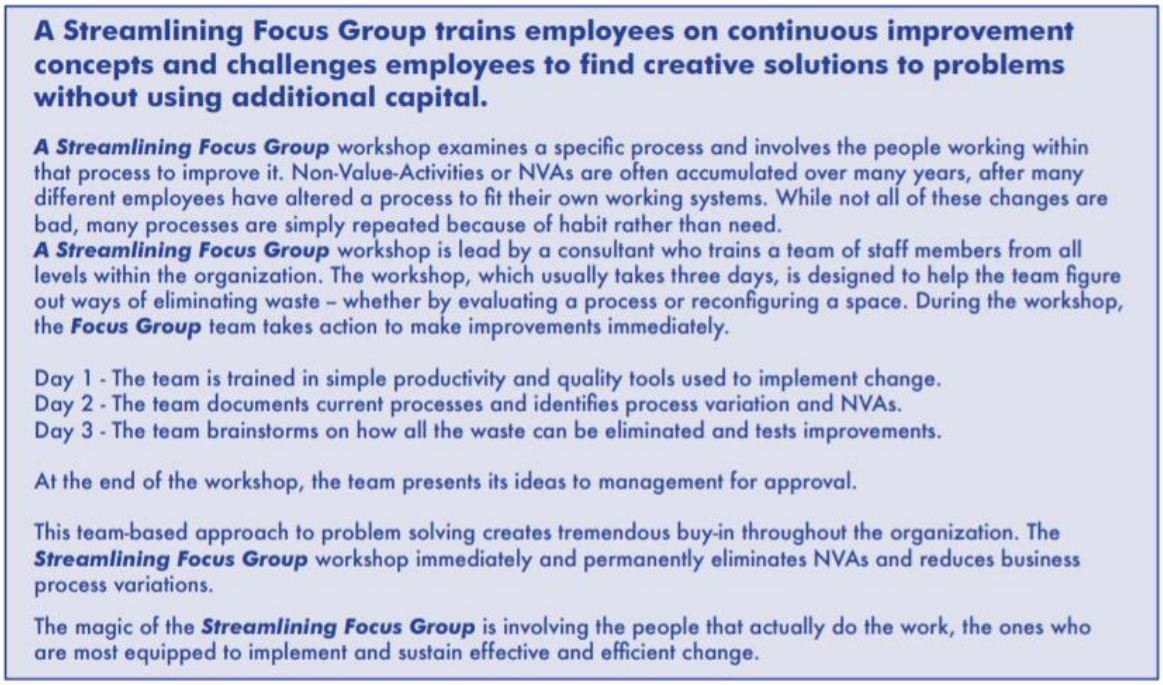
Increase Current Code Enforcement Efforts

Virginia Beach recently identified strategic code enforcement areas as part of the 2016 Needs Assessment. While only 15% of homes have had one or more code violation in the past year, DHNP could limit future violations by increasing its code enforcement in the designated strategic areas. Increasing code enforcement patrols could decrease the probability of violations in the future especially as the number of aging homes continues to grow. It is not suggested that Virginia Beach increase noncompliance fees because of the low income and cost burdened nature of current low-income neighborhoods. It is important to note, however, that increasing code enforcement through this strategic approach, could mean more residents will be unable to be for cited violations.

Involving the Community in Efforts

In order to increases community engagement in code enforcement efforts, some localities, like Cleveland, OH created code enforcement partnerships. These partnerships engage neighborhoods in the code enforcement process by working with the organizations to both keep up with complains and garner feedback. Since Cleveland has a Community Development Corporation (CDC) that is in charge or rehabilitating homes in the area, the local code enforcement partnered with them for assistance in making necessary repairs. The partnership staff also helps conduct windshield assessments of violations near their properties. As Figure 9 illustrates Cleveland makes sure that each participant is kept up to date on code enforcement standards through its streamlining focus group (Frater, Gibson, O'Leary, 2009).

Figure 9: Summary of Cleveland Streamlining Focus Group Procedures



A Streamlining Focus Group trains employees on continuous improvement concepts and challenges employees to find creative solutions to problems without using additional capital.

A Streamlining Focus Group workshop examines a specific process and involves the people working within that process to improve it. Non-Value-Activities or NVAs are often accumulated over many years, after many different employees have altered a process to fit their own working systems. While not all of these changes are bad, many processes are simply repeated because of habit rather than need.
A Streamlining Focus Group workshop is lead by a consultant who trains a team of staff members from all levels within the organization. The workshop, which usually takes three days, is designed to help the team figure out ways of eliminating waste – whether by evaluating a process or reconfiguring a space. During the workshop, the ***Focus Group*** team takes action to make improvements immediately.

Day 1 - The team is trained in simple productivity and quality tools used to implement change.
Day 2 - The team documents current processes and identifies process variation and NVAs.
Day 3 - The team brainstorms on how all the waste can be eliminated and tests improvements.

At the end of the workshop, the team presents its ideas to management for approval.

This team-based approach to problem solving creates tremendous buy-in throughout the organization. The ***Streamlining Focus Group*** workshop immediately and permanently eliminates NVAs and reduces business process variations.

The magic of the ***Streamlining Focus Group*** is involving the people that actually do the work, the ones who are most equipped to implement and sustain effective and efficient change.

(Frater, Gibson, O'Leary, 2009)

In addition to concentrating additional code enforcement in strategic areas, DHNP could also work with HOAs and neighborhood community organizations to create code enforcement partnerships similar to the Cleveland and Fort Worth models. This is especially important since under the social service model, Code Enforcement would be working with these entities to identify where the needs in the community are.

Evaluation of Alternative 1: Social Service Model

Total Cost (over 15 Years)- *($206-$264 million)*

The social service model costs an additional $206-$264 million over 15 years which equates to roughly $13.5-$17.5 million annually. A majority of these costs ($199-$255 million) are born by

residents who have to comply with cited code violations through receiving a permit and completing the home improvement. The government bears only roughly 3 percent ($7-$9 million) of the total costs in administrative costs to fund the subsidy program, conduct code inspections, and process building permits. While total rehabilitation costs will be dispersed between 20,000 and 25,000 households over 15 years (roughly $10,000 a resident), the high cost burden on CEA households is important to consider since it's a lower income population.

Effectiveness-

Number of Home Improvements (over 15 years)- (20,216-25,876)

The social service model's violation/enforcement component means it's highly effective at increasing the number of home improvements over 15 years. This option would increase the number of CEA home improvements between roughly 20,000 and 25,000. This is primarily because residents must address the violation, once caught, to avoid legal consequences.

CEA Improvement Likelihood- (very likely)

The increase in home improvements as a result of this program would likely to occur within the CEA because code enforcement is place. Increasing the amount of code inspections in the CEA is likely to increase the number of reported violations. Because violations have to be addressed or face legal action, it is likely that residents will comply with violations and seek assistance from the subsidy program if they are unable to do so.

Cost Effectiveness- *($10200/home improvement)*

This program is moderately cost-effective costing roughly $10,200 to implement per home improvement conducted over 15 years. As illustrated in the cost section, a majority of the cost per home improvement is borne by residents who have to pay for rehab and permit fees unless they receive a subsidy.

Feasibility- *(very likely)*

Since the owner-occupied rehab subsidy and code enforcement checks already exist, expanding both programs will be very politically feasible. DHNP has high levels of autonomy over its budget allocations and has the authority to change its program allocations without official City Council approval. One downside to feasibility is that some residents in the CEA may be uneasy about increased code enforcement checks in their area. The corresponding increase in subsidies, however, should mitigate some of the concerns since DHNP can assist those homeowners who are most vulnerable with repairs.

Sustainability- *(Extensive)*

This program is not as sustainable as other alternatives because it is heavily dependent on HUD funding to continue. Since DHNP receives a majority of its budget on HUD funds, the longevity and effectiveness of expanded services will depend on HUD funding allocations. DHNP can

offset some funding variability with public-private partnerships within the city but these funds are unlikely to cover the entire costs of the program.

Alternative and Evaluation Summary

Option 1: Social Service Model	
Expand code enforcement operations by 10% in the Strategic Code Enforcement Area and double the number of subsidies available under the current owner-occupied rehabilitation program. The Code Enforcement Division will partner with the Housing Administration Division to provide both services as a social service model.	
Positives	**Drawbacks**
-very effective -internally regulated through DHNP -implementation relatively easy since infrastructure is already in place -encourages home improvements within CEA -low local government cost burden	-mandatory compliance requires large resident costs over 15 years (dispersed among CEA residents) which could be difficult for low income residents -limited longevity because of uncertain levels of HUD funding

Option 2: Change the Tax Structure (Split-Rate Property Tax)

Current Real Estate Assessment Process and Tax Structure

Virginia Beach currently utilizes a standard property tax at an equal rate of roughly 1.00% of a home's assessed fair market failure value. In addition to the standard property tax, City Council designates some areas as special service districts (SSD) with varying tax rates ranging from 1.06 to 1.47% of assessed value. These special service districts include areas of the city with increased vulnerability including Sandbridge and Old Donation Creek and are voted on and decided by City Council. Figure 10 provides a summary of current special service districts and their associated tax rates compared to the general tax rate.

Figure 10: Current Real Estate Tax Rates in Virginia Beach, 2019

General Tax Rate		**1.0025%**	
Special Service Districts (SSDs)			
Sandbridge	1.0625%	Chesopeian Colony	1.2938%
Central Business District South	1.4525%	Harbour Point	1.0815%
Old Donation Creek	1.1865%	Gills Cove	1.0655%
Bayville Creek	1.4745%	Hurds Cove	1.4405%
Shadowlawn	1.1619%		

Gathered from: (Current Tax Rate, 2018)

Proposed Changes to Tax Structure

Similar to its current special service districts approach, Virginia Beach could incentivize homeowner redevelopment through instituting a split rate tax approach to property taxes. Split rate taxes tax land at a higher rate than the buildings on the land. By taxing building improvements at a lower rate, many localities, such as Philadelphia, increased their property values and promoted redevelopment projects. In Philadelphia, the government institute a 2% tax on buildings and 10% tax on land instead of having a 4% tax for both. After implementing the program, the city saw a modest increase in revenues (Dye and England, 2010.)

Since Virginia Beach does not struggle with abandoned and vacant properties to the extent that Philadelphia experienced, Virginia Beach could institute a more modest split rate tax with a .05% tax on buildings and a 1.75% tax on land.

Evaluation of Alternative 2: Split Rate Tax

Total Cost (over 15 Years)- *($57-$74 million)*

Instituting a split rate property tax would cost roughly $6-$8 million per year with residents paying most of the costs. Local government costs ($6-$8 million) are lower than resident costs since the local government would be providing administrative services, permit inspections, and property assessment inspections. A majority of costs incurred on residents ($51-56 million) include the estimated $10,000 in rehabilitation costs for each rehab project completed. Since residents are voluntarily undertaking home improvements, however, these dispersed costs should not pose a political threat.

Effectiveness-

Number of Home Improvements- (5,093-6,521)

This alternative is moderately effective at increasing home improvements with between 5,093 and 6,521 occurring over 15 years. This effectiveness measure assumes that 3-4% additional building permits will occur every year because of the tax change (Dye and England, 2010). This estimate is highly volatile, however, since previous studies of split-tax rates included localities with significantly more vacant properties than Virginia Beach.

CEA Improvement Likelihood- (moderate)

It is unclear whether a lower property tax burden will necessarily increase the number of home improvements. Since this tax reduction is not contingent on a home improvement, utilization does not equate with home improvements. While studies indicate that split rate taxation can increase rehabilitation by lowering the cost of improvement taxes, this option is contingent on the assumption that residents will use their extra income to improve their homes.

It is also unclear whether improvements that are made will occur in the CEA. This option is a citywide alternative and is not contingent on improvements occurring in the CEA. Homeowners in wealthier areas may be more likely to use this incentive for improvements compared to lower income residents in the CEA. Similar to results seen in a Richmond Historic Tax Subsidy, lower income residents may be less likely to utilize the program (Rehabilitation Tax Abatement, 2019).

Cost Effectiveness- *($11,300/home improvement)*

This program is somewhat cost-effective costing roughly $11,300 to implement per home improvement conducted over 15 years. As illustrated in the cost section, a majority of the cost per home improvement is borne by residents who have to pay for rehab and permit fees unless they receive a subsidy.

Feasibility- *(unlikely)*

In order to change the property tax code, City Council must vote for a split rate tax. Since the Real Estate Assessor's Office has jurisdiction over property taxes, DHNP would have to work with City Council and the Real Estate Assessors' Office to advocate for a split rate tax. Because having two tax rates instead of one would drastically alter the current tax code, it is unlikely that City Council will approve this intervention right away. Residents also may be skeptical of a sudden change in the property tax even if it results in the same amount of municipal revenue. Because land would be taxed at a higher rate than improvements, residents with homes on more acreage would be particularly opposed to the change. Given some time to convince the general public of the benefits of a split tax rate, the political climate could be more favorable. It is unlikely that change will happen soon, however, because of political and local resident pushback.

Sustainability- *(Extensive)*

If this option were to pass City Council, the property tax rates would become part of the municipal code. This means that rates would stay constant until City Council decided to pass a revision or repeal of the split-tax code. Since this option is a legal change to the code voted on by City Council, it is likely that the program will remain the same from year to year.

Alternative Summary

Option 2: Split-Rate Property Tax	
Work with City Council and the Real Estate Assessor's Office to change the Virginia Beach property tax code from a uniform rate to a split-tax property rate. Under a split tax system, buildings (improvements) would be assessed at a lower rate than the land they are on to encourage home improvements. Suggested tax thresholds are 1.075% for land and 0.5% for improvements.	
Positives	**Drawbacks**
-Very sustainable in the long term because its municipal code-based -Relatively cost effective—other options are slightly more or less expensive and most costs dispersed among residents	-Doesn't necessarily promote growth within the CEA since it's a citywide change -Number of home improvements can be volatile and usage works best in areas with vacant properties -Political feasibility difficult since it requires a large change in current assessment practices; pushback from large landowners

Option 3: Institute Tax Exemptions for Home Improvements

Not all homeowners who don't invest in their homes have economic limitations that prevent them from doing so. Some homeowners may not have the incentive to repair their homes because of the increase in property taxes associated with rehabilitation projects. The City could incentivize homeowners to invest in their properties by providing tax rebates for home improvements.

Current Commercial and Industrial Rehabilitation Exemption

The purpose of the partial real estate exemption for certain rehabilitated, renovated, or replacement commercial or industrial structures was to prevent deterioration and decay in areas designated by the City Council. Figure X outlines the eligibility and program requirements necessary for the tax exemption. Eligibility for this exemption requires that the commercial or industrial structure to be located within exemption district and that the property be more than 20 years old. Qualifying areas are determined by City Council and currently include Accident Potential Zones (APZ) which are areas with increased noise pollution. The exemption will only be applied if the project increases the assessed value by 40 percent or more. If the building resides in an APZ zone, the threshold lowers to 20% increased assessed value to encourage more redevelopment in these areas. Any applications for the tax exemption must be filed prior to building and all permits must be approved (Significantly Rehabilitated Commercial or Industrial Structures, 2019).

Figure 11: Summary of Current Commercial and Industrial Tax Exemption, 2019

Eligibility Requirements	Program Requirements
-structure is 20+ years old -structure lies within exemption districts determined by City Council	-Exemption equal to assessed rehabilitation value increase -Rehabilitation project must increase assessed value by at least 40% (20% for areas in Accident Potential Zone 1) -Exemption runs with the land for 15 years -Initial $100 application fee -Applications must be filed with the Assessor prior to any rehabilitation for which an exemption is sought

Created using: (Significantly Rehabilitated Commercial or Industrial Structures, 2019)

Proposed Tax Exemption Expansion to Residential Units

The current rehabilitation tax exemption program only applies to commercial or industrial properties located in exemption districts. Working in coordination with the Real Estate Assessor's office and City Council, DHNP could expand the exemption to residential properties located in strategic code enforcement areas. Since this alternative proposes a change to Virginia Beach's tax code, DHNP would need to work with and inform City Council to add the CEA to designated residential exemption districts.

Figure 12: Summary of Proposed Residential Rehabilitation Tax Exemption, 2019

Eligibility Requirements	Program Requirements
-structure is *40+ years old* -structure lies within designated Strategic Code Enforcement Area	-Exemption equal to assessed rehabilitation value increase -Rehabilitation project must increase assessed value by at least 20% -Exemption runs with the land for *15* years -Initial *$100* application fee

Studies indicate that similar, including energy efficient and historic home rehabilitation exemptions can encourage redevelopment in qualifying areas. In Richmond, a historic rehabilitation tax exemption significantly increased the number of rehabilitation projects with 9 percent (roughly 1,600) of eligible properties participating in the program (Rehabilitation Tax Abatement, 2019). Since Virginia Beach similar in single family home composition to Richmond, it is possible that Virginia Beach could see similar gains through a residential tax exemption program.

Evaluation of Alternative

Total Cost (over 15 Years)- *($34-$47 million)*

This alternative is a relatively cheap intervention costing between $34 and $47 million over 15 years. Unlike the other two alternatives, a majority of the costs associated with this alternative are borne by the local government. Lost revenue from increasing home values is the largest driver of local government costs. Since eligible homeowners are only paying property taxes on the pre-rehab assessment for 15 years, Virginia Beach misses out on millions of dollars in revenue each year. While this analysis does not project property value increase specifically, it is estimated that the City could recoup a majority of these losses once the property tax exemption expires assuming property values remain elevated from before the exemption.

Effectiveness-

Number of Home Improvements- (3046-3917)

The tax exemption program provides relatively less home improvements over 15 years since homes must be located in the CEA to qualify as opposed to other alternatives that are city-wide. Based on estimates by a similar program in Richmond, it is estimated that roughly 9% of the 43,500 CEA households will take advantage of the subsidy equating to 3046-3917 per year depending on the uptake rate.

CEA Improvement Likelihood- (Very Likely)

This program is likely to result in home improvements within the CEA because both home improvements and residence within the CEA are preconditions of the exemption. Since improvements outside of the CEA don't qualify, all additional improvements resulting from this program will be located in the CEA. While this study does not specifically target low income

residents, low income residents may be less likely to utilize the exemption because they might not have the capital to undertake an improvement that warrants the 20% assessed value increase .

Cost Effectiveness- *($8,900-$12,300/home improvement)*

This program is pretty cost effective if 9% of eligible homeowners participate in the program. With a 9% uptake rate, each home improvement costs roughly $8,900. Under a lower uptake scenario of 7% the tax exemption option becomes more expensive relative to other alternatives. As illustrated in the cost section, a majority of the cost per home improvement is borne by the local government since they are losing millions in revenue over the 15 years that residents are not paying taxes on the increased assessment value.

Feasibility- *(Likely)*

Instituting a tax exemption requires City Council approval based on both the exemption terms and location. Because the CEA resides within almost every council district, each Council member is likely to champion the exemption to some degree. City Council approval, however, means that DHNP will have to work with both the Real Estate Assessor's Office and City Council members to implement the program. Getting each stakeholder on board could stall the process but since this recommendation is expanding an existing exemption it not face political dissent.

Sustainability- *(Extensive)*

Similar to the split rate property tax alternative, the fact that the tax exemption is a City Council voted item means that the program is less likely to change from year to year. Unless City Council repeals or modifiers the tax exemption with a majority vote, the tax exemption will remain in place for those that qualify each year.

Alternative Summary

Option 3: Tax Exemption	
Expand the current Commercial and Industrial Rehabilitation Tax Exemption to residential properties within the CEA. The exemption would last with the land for 15 years and be equal to the increased value resulting from the home improvement. Eligible properties would be (1) 40+ years old, (2) located within the CEA, and (3) increase the assessed value by 20%.	
Positives	**Drawbacks**
-Ensures rehabilitation within the CEA per program requirements -Moderate feasibility since commercial/industrial program already exists but requires City Council approval -Long term protection because requires City Council removal once adopted	-20% increased value threshold could be difficult for low income households -costs concentrated for the local government during the 15 years of the tax exemption -cost effectiveness dependent on uptake rate: rates lower than about 7.5% make this alternative more expensive than other options

Outcomes Matrix Summary

The figure below summarizes the relevant advantages, disadvantages and tradeoffs associated with each alternative.

Figure 13: Summary of Intervention Outcomes and Tradeoffs

Criteria	Description	Potential Interventions		
		Social Service Model	**Split Rate Property Tax**	**Tax Exemption**
Cost*	Local Government	$7-$9 million	$6-$8 million	$34 million-$47 million
	Local Residents	$199-$255million	$51-$66 million	$1 million
	Total Cost (dollars, over 15 years)	**$206-$264 million**	**$57-$74 million**	**$35-$48 million**
Effectiveness	# home improvements (building permits)	20216-25876	5094-6521	3046-3917
Effectiveness Cost-Effectiveness	CEA likelihood (unlikely, likely, very likely)	Very likely	Likely	Very Likely
	$/home improvement (dollars)	$10,200	$11,300	$8,900-$12,300
Feasibility	Political Feasibility (unlikely, likely, very likely)	Very Likely	Unlikely	Likely
Sustainability	Program Longevity (limited, moderate, extensive)	Limited	Extensive	Extensive

*value rounded to the nearest million

Recommendation

Option 1: Expand Subsidy Program and Code Enforcement

DHNP should address aging homes and promote home improvements through a social service model that both enforces code violations and provides assistance for needy homeowners. This model would double the number current owner-occupied rehab subsidies, and increase the number of code enforcement by 10 percent within the designated Code Enforcement Area.

Aging homes in Virginia Beach are more likely to have increased code violations and are generally occupied by lower income residents relative to the rest of Virginia Beach (VB OpenData, 2019). The Social Service Model balances the need for increased code enforcement with the income barriers many CEA households face. While this is the most expensive alternative relative to the other options, it also the most effective providing 5 to 7 times more home improvements over 20 years. The high costs associated with the alternative are largely borne by residents because of the higher number of building permits. Since these costs are dispersed among CEA households, no one group is disproportionately burdened by the intervention. Feasibility is also likely because this option expands on a current program. Some tradeoffs include uncertain funding and sustainability. Since HUD funds much of DHNPs operations, additional revenue to run the program would have to be City-led or requested by HUD. The reliance on annual funding means that the program could experience budget cuts over the 15 years that could limit effectiveness. On the whole, the social service model provides the most home improvements and is likely to be implemented despite higher overall costs and funding uncertainty.

Option 2, Instituting a Split Rate Property Tax, is a moderately expensive option that poses the smallest tax burden on the local government. This option, however, would require City Council approval and significant public preparation because of the change in tax structure. The public would need to be informed about how the split rate tax works. Even though political feasibility would be extremely difficult for this reason, this would be a very sustainable option since the requirements would be written in Virginia Beach's code.

Option 3, Creating a Residential Rehab Tax Exemption, is a lower cost alternative compared to the social service model but it is more expensive per home improvement. Additionally, this model puts a lot of the costs on the local government because of lost property tax revenue. Since a similar program exists for commercial and industrial properties, however, this option would be relatively easy to implement as long as it got City Council approval.

Based on the above analysis, **I recommend that the Virginia Beach Department of Housing and Neighborhood Preservation Institute a social service model by expanding their current subsidy and code enforcement programs.**

Implementation Considerations

While having an existing subsidy and code enforcement program will help with implementing an expanded social service model, there are other factors to consider. It is important that throughout the 15-year time frame DHNP keep in mind the quality of the CEA, whether they're providing an adequate number of supports, and whether the program has a sustainable and sufficient funding stream.

Measuring Neighborhood Quality Is Complex

A theme from the literature is that neighborhood quality is complex and difficult to measure. While difficult to measure, some studies created a more definitive metric for neighborhood quality including crime data, school quality, income levels, and walkable networks (Holzer, 2017; Jennings, 2012). Since neighborhood quality is intimately tied with property values and these metrics, it is important for Virginia Beach moving forward to strive for better estimates of neighborhood quality. While home improvements are a good start, the City can use some of these data markers to get a better sense of neighborhood trends and forecasting property valuers.

Ability to Pay Should be Central

Eligibility for a program does not necessarily mean that an individual will utilize a program. Research indicates that many incentive-based approaches to home improvements like tax exemptions and tax breaks, can disproportionately help middle- and higher-income earners who have more capital to utilize the program. Moving forward, Virginia Beach may want to invest in more rehabilitation project grants not associated with code violations so that more residents can take advantage of larger scale redevelopment projects.

Importance of Innovative Funding Streams

A majority of DHNP's budget consists of federal HUD dollars. While this allows DHNP to conduct services without a cost to the City, these revenues have the potential to change in the future and have a certain degree of uncertainty. In order to continue to fund rehabilitation interventions, Virginia Beach should continue to look for innovative funding solutions. The 2016 Needs Assessment identified several methods included a land trust, community development corporation, and public private partnerships.

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Appendix A: Cost Assumptions

This appendix outlines the various assumptions required for cost effectiveness analysis which provided the cost, effectiveness, and cost effectiveness analysis for this report. Using a list of general and alternative-specific assumptions, this cost effectiveness analysis measured the annual cost of the program over 15 years and how many home improvements. Since more immediate outcomes and resources are valued higher than future ones, each cost and outcome measure was discounted to present value using the appropriate discount rate. A sensitivity analysis description is also included to explain how value ranges were calculated for each alternative. Below is a summary table of the assumptions used for the cost, efficiency, and cost-effectiveness measures of each alternative.

Figure 14: Cost Assumptions

General Assumptions		
Assumption	**Description**	**Source/Justification**
Discount Rate	5%	Standard for public intervention
Time Frame	15 years	Amount of time for tax exemption; other alternatives have no explicit time limit so used same time frame to compare each alternative
Residential Households	126,618 parcels	VB OpenData Portal, Parcel, 2019—used parcels as approximation for households. (not including those with land use labeled military base, water, undeveloped or street network or subdivision with office, pump station, retirement facility, shopping center, or com elements)
Residential Households within CEA	43,519 parcels	Resident parcels that were within a ¾ radius from strategic growth areas
Average number of home improvements per year	16,800	VB Open Data, Number of building permits, 2018
Cost per home improvement	$296.34	Estimate, based off of current building permit rates including processing costs and fees
Average home improvement cost	$10,000	Moderate home improvement
All costs occur at the end of the year	Year end	Standard Practice
Inflation Adjustments	2019 Real Dollars	All salary data was from 2019 so adjustments were not needed

Option 1 Assumptions: Social Service Model		
Assumption	**Description**	**Source/Justification**
Increase in citation violations (annually)	2,000 every year	Represents a 10% increase in citations, same every year for simplicity
Number of subsidies (annually)	45	Doubling of current subsidies
Average subsidy amount	$10,000	Maximum amount allowed under current OORP program
Additional subsidy costs	Funded by City	Assumes no increase in HUD funding although pursuing funding that could lower costs
Development Officer Costs--HUD reporting (annually)	$32.86/hr., 8 labor hrs.	VB OpenData, employee salaries, 2019, estimated work hours
Housing Specialist Costs per subsidy (administers subsidy, annually)	$18.42/hr., 1.5 labor hrs.	VB OpenData, employee salaries, 2019; estimated work hours
Code Inspector Costs per violation (annually)	$25.41/hr., 1.5 labor hours	VB OpenData, employee salaries, 2019; estimated work hours
Option 2 Assumptions: Split Rate Tax		
Assumption	**Description**	**Source/Justification**
Administrative Costs per real estate assessment (annually)	$31.47/hr., 1 labor hour	VB OpenData, employee salaries, 2019; estimated work hours
Increase in home improvements	3 percent	(Dye and Engalnd, 2010)
Number of home improvements (annually)	504	VB OpenData, building permits, 2019; 3 percent of current annual building permit applications
Option 3 Assumptions: Tax Exemption		
Assumption	**Description**	**Source/Justification**
Rehab Project Completion	All projects are completed within the year of the exemption application (Year 0)	Simplifying assumption
Tax Exemption Utilization	All tax exemptions start in the first year of the program	Simplifying assumption
Number of Home Improvements (upfront)	3,917	9% of eligible participants (CEA households) utilize program based off of (Rehabilitation Tax Abatement, 2019)
Appraiser costs per household—processing exemptions (upfront)	$31.47/hr., 1 labor hour	VB OpenData, employee salaries, 2019, estimated labor hours

General Property Tax Rate	0.010025 ($1.25 for every $100 of assessed value)	Current real estate property tax for non-special-service districts
Median Home Value within CEA	$216,685	Median value assessed in CEA neighborhoods FY 2018-2019
Median Increase in Home Value after Improvement—i.e. lost revenue (year 1)	$52,337	Minimum amount required with an at least 20% increase in assessed value requirement
Estimated annual home assessment growth rate after year 1	1.8%	Single family annual growth rate as a result of rehab intervention in Richmond (Rehabilitation Tax Abatement, 2019)
Tax Exemption Fee (upfront)	$100	Current rate for VB's commercial/industrial rehab exemption

Calculations

Below is a description of the calculations used to calculate cost, effectiveness, and cost effectiveness. Ranges were created using various discount rates for the outcomes matrix although several other variables such as labor hours, average home improvement cost, and take-up rate affect ranges. Below is a sample of how most program and outcome costs were calculated.

Program Costs

= (*Program Costs) * (number of permits) * (hours additional work required)* over 15 years and discounted to present values

Home Improvement (Outcome) Costs

= *(Building permit fees) * (Inspections coordinator salary) * (hours spent per inspecting per permit) * (number of permits)* over 15 years and discounted to present values

Lost Tax Revenue (Tax Exemption Alternative)

= *(increase in original property value) * (property tax rate) * (number of improvements)* over 15 years and discounted to present values. Where:

- Increase in original property value = *(increase in home value from previous year) + [(increase in home value from previous year) * (property value growth rate)]*

Sensitivity Analysis

Sensitivity analysis was conducted for each alternative to calculate a range of cost, effectiveness, and cost/effectiveness values. The discount rate served as a general sensitivity check with each assumption receiving analysis at 3, 5, and 7% discount values. A summary of the sensitivity checks conducted is below: Since all tax exemption outcomes accrue in the first year, the rate of uptake was adjusted from 9% to 7% to get a range of values.

Figure 15: Sensitivity Analysis Summary

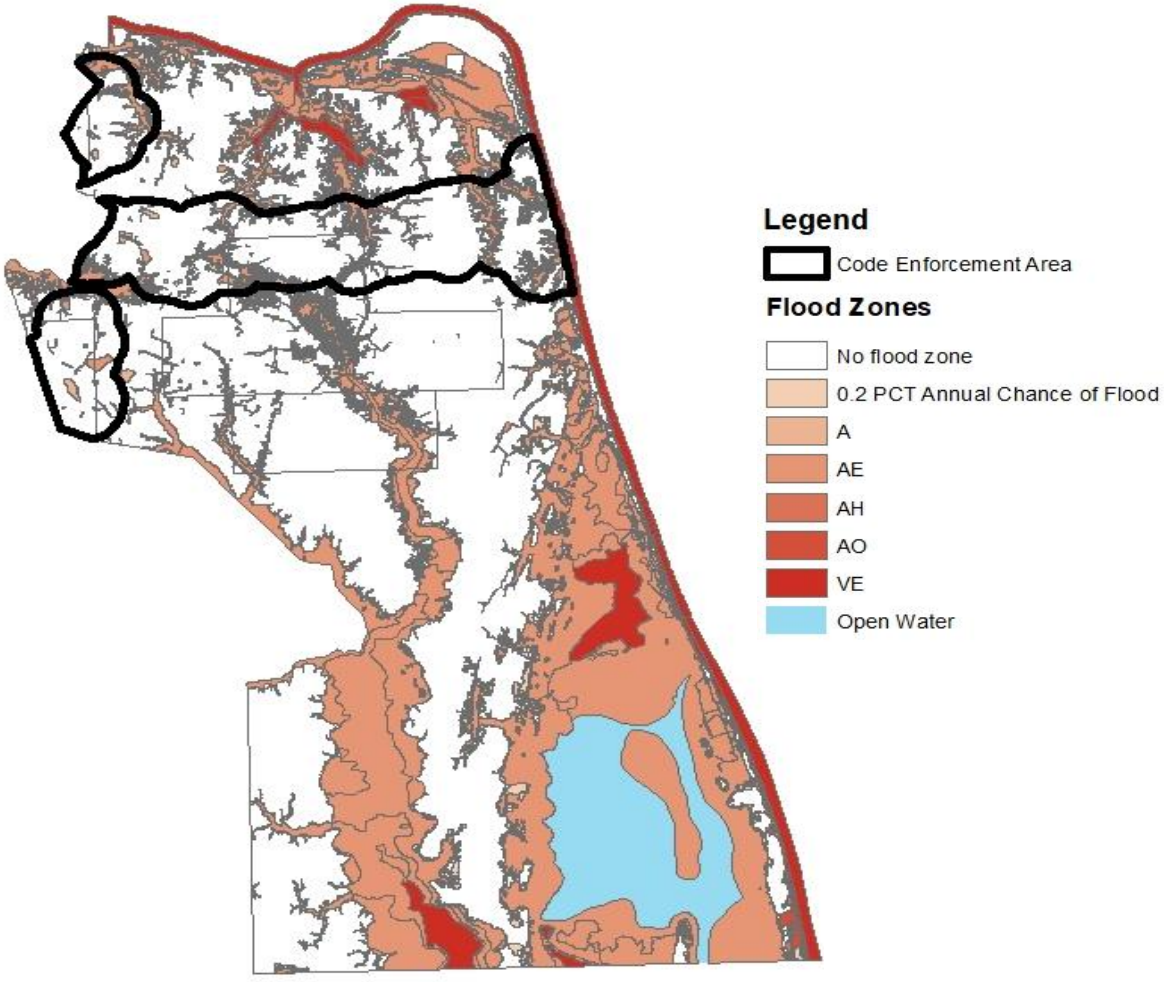
Sensitivity Test	Description	Impact on Alternatives
Discount Rate	3, 5, and 7 %	Social service model has undeniably more rehabilitations but higher discount rate makes tax exemption more cost-effective
Tax Exemption Uptake Rate	7% (low estimate), 9% (high)	Based off of Richmond data

Appendix B: Additional CEA Characteristics

Flood Zones

Flood zones are an important consideration for any home rehabilitation program because of the negative impacts flooding can have on both neighborhood quality and property values. Figure 16 shows areas of Virginia Beach that are prone to flooding. The darker color indicates both a higher likelihood of flooding and a higher flood height. Areas designated with an "X" don't have a flood risk, 0.2 zones have a moderate risk, A- categories are high risk, and V- categories are high risk coastal areas (FEMA Flood Zones, N.D.) As indicated in the map, a majority of the CEA is not within a flood zone. Portions that are in a flood zone, face only a mild flooding risk.

Figure 16: Virginia Beach Flood Zones, 2015

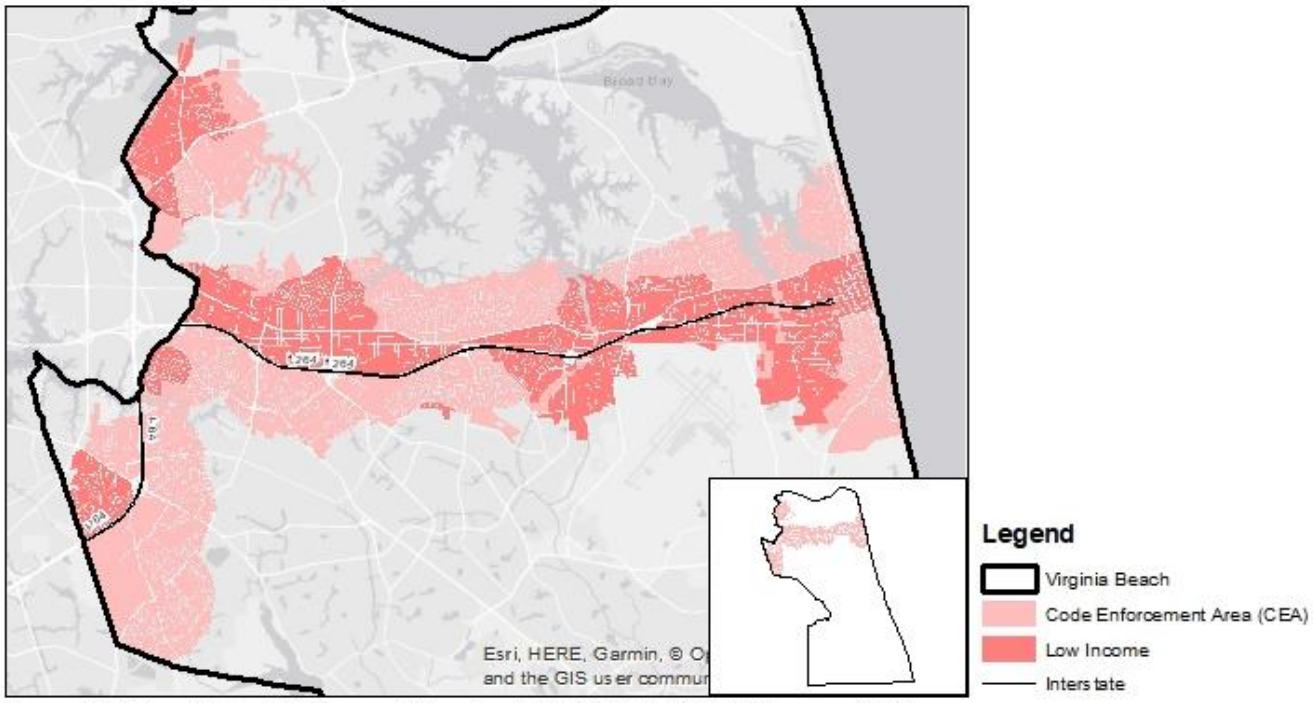


Created using: include VBOpenData, 2019 (FEMA maps, strategic planning districts)

Household Income Level

Income level is an important factor to consider when making policy decisions surrounding rehabilitation programs. While a resident may have the willingness to undergo a home improvement or address a code violation, they may not have the financial means to do so. As indicated in Figure 17, roughly a third of households within the CEA are low or very low income making less than $60,000 a year (U.S. Census, 2017 VB Open Data; HUD Income Limits). In addition to being low income, many of these households are also cost burdened and pay more than 30 percent of their income on housing. One out of every two CEA household is cost burdened (VB OpenData, ACS Data).

Figure 17: Low Income Households within CEA



Source: VB OpenData, ACS 5-year Estimates 2012-2016, HUD 2018 Income Limits