

# **Planning Commission**

## **Joint Public Hearing**

**and**

## **Regular Session Agenda**

**June 5, 2012**

**6:00 P.M.**

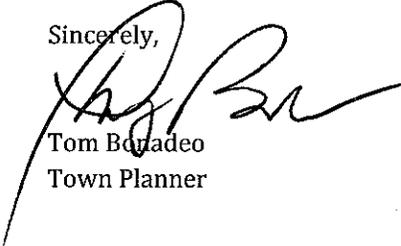
1. Call to Order – Planning Commission Joint Public Hearing and Regular Session
  - a. Roll Call – Establish a quorum
  - b. Hear Public Comment on the Zoning Map Amendment and CUP for the School property
  - c. Close Public Hearing
2. Invocation and Pledge of Allegiance
3. Public Comments
4. Consent Agenda
  - a. Approval of Agenda Format
  - b. Approval of Minutes
  - c. Reports
5. Old Business
  - a. CUP and Rezoning of parcel
  - b. Sign Ordinance Review – Additional Review of Draft Ordinance
  - c. Harbor District Zone – Review Density – Mason Avenue Area
6. New Business
7. Announcements
8. Adjourn

Dear Commissioners,

Town Council has called for an additional Joint Public Hearing with Planning Commission to receive public comment on the Zoning Map Amendment and CUP. Prior to the first public hearing, not all surrounding land owners were notified. This has been completed and I expect additional public input at the hearing.

There is no change in the application requirements and the staff work is not changed. Please review the staff work and maps that are included.

Sincerely,



Tom Boradeo  
Town Planner



**DRAFT**  
**PLANNING COMMISSION**  
**Regular Meeting**  
**Town Hall**  
**May 1, 2012**

At 6:02 p.m. in the Town Hall, Chairman Bruce Brinkley, having established a quorum, called to order the Regular Meeting of the Planning Commission. In attendance were Vice Chairman Dennis McCoy and Commissioners Malcolm Hayward and Joan Natali. Commissioner Mike Strub was not in attendance. There were currently two (2) vacancies on the Commission. Also present were Town Planner Tom Bonadeo and Town Clerk Libby Hume. There were no members of the public in attendance.

A moment of silence was observed followed by the Pledge of Allegiance.

**REGULAR MEETING PUBLIC COMMENTS**

There were no comments from the public nor any written comments submitted prior to the meeting.

**CONSENT AGENDA**

**Motion made by Malcolm Hayward, seconded by Dennis McCoy and unanimously approved to accept the agenda as presented.**

The Commissioners reviewed the minutes for the April 3, 2012 Public Hearing & Regular Meeting.

Joan Natali suggested that the first item under Reports should state that the building being referenced was the Harbor Bath House. Item vii) under Reports should state that one section of the new Hotel Cape Charles could be a restaurant vs. would be a restaurant since there were no definite plans.

**Motion made by Malcolm Hayward, seconded by Dennis McCoy, to approve the minutes from the April 3, 2012 Public Hearing & Regular Meeting as amended. The motion was unanimously approved.**

**REPORTS**

Tom Bonadeo reported the following: i) VDOT would be coating all the asphalt streets in Town later this month. Staff would be meeting with VDOT and the contractor to review more details. The slurry coating is a fast-drying coating and residents would be notified by the contractor prior to work beginning on their street. All vehicles, trailers, boats, etc. must be removed from the street in order for the work to be done; ii) The restaurant building at the Harbor now had electricity and the remaining work was mainly in the kitchen area. The owner was hoping to open by Memorial Day; iii) Boytos & Boytos completed the interior tile, painting and trim for the Harbor Bath House. The sewer pump was completed and the deck was ready for construction. The interior partitions were due by May 15<sup>th</sup> for the final inspection and Certificate of Occupancy (CO); iv) Staff was working on the parking plan for the Harbor. Parking spaces needed to be lined out before COs could be issued for the Bath House and restaurant. The parking plan needed to ensure that emergency vehicles could get through and turn around in the area; v) Work on the beach was underway in preparation for the summer. Staff had cleared out some of the dune at the crossovers and sand had been added to the north end of the beach to replace what was lost during the hurricane last summer. Bruce Brinkley asked if the Town was adhering to the Chesapeake Bay Preservation Act. Tom Bonadeo stated that the Town was very careful in regards to compliance with the Chesapeake Bay Preservation Act and could do beach nourishment down to the mean low water. There were no tiger beetles in the area. Tom Bonadeo went on to explain that the Town of Cape Charles was one of

the first Towns to adopt the Chesapeake Bay Preservation Act and the first Town to undergo a 10-year audit; vi) VDOT reviewed their 6-year plan and the highest priority project was the Routes 641 & 642 corridor in Cape Charles. \$43K per year was allotted to the project for six (6) years. Unfortunately, the estimated cost of the project was \$4M+. Staff was working with VDOT regarding possible less costly alternatives; vii) Bruce Brinkley noted the glass balconies on the Hotel Cape Charles and asked whether they had been approved. Tom Bonadeo stated that the plans were reviewed and approved by the Historic District Review Board and added that ornamental ironwork would be added. Once the glass was cleaned, it would be clear and give the appearance of being open; viii) The Brown Dog Ice Cream Parlor should be opening soon in the former Harbor Grill location; ix) A Yogurt Bar was being planned in the former Delisheries building. Several sets of plans have been submitted but they did not meet the Code standards. The owners were planning to add two (2) stories to the building, but the plans could not be approved without engineering plans; and x) A glass artisan was planning to open later this summer on Mason Avenue next to Malcolm Hayward's former store. xi) Malcolm Hayward stated that he heard that the Old Fire House would be reopening and that a chef had been hired.

#### **OLD BUSINESS**

##### *Sign Ordinance Review - Draft Ordinance*

The Commissioners continued their work on the Zoning Ordinance Section 4.1 - Sign Regulations update.

Section 4.1.H.2 - Temporary Signs: Tom Bonadeo referred to current signage on the Gallagher property, which was 20 acres, the South Port property which was 80 acres, and the former Meatland building as examples for the following:

##### Real Estate Signs:

Item a.(2): There was some discussion regarding whether this section should be kept or deleted since currently, the only area where this was applicable was Bay Creek and their covenant covered signs. It was decided to keep this section since the Keck property could possibly be developed in the future. The signage could be no greater than 32 square feet in area nor 6 feet in height. All signs shall be removed within 7 days after sale of the last original lot.

Item a.(3): The Commissioners agreed that real estate signage advertising commercial or industrial buildings should be no greater than 12 square feet (3'x4') in area nor 8 feet in height and limited to one (1) sign per street front.

Item .(4): Real estate signage advertising vacant commercial or industrial land should be no greater than 20 square feet (4'x5') in area nor 8 feet in height for properties of 10 acres or less. For properties exceeding 10 acres, the signage should be no greater than 32 square feet (4'x8') in area nor 8 feet in height.

Item a.(5): Signage should be removed no later than 7 days after execution of a lease or closing of the sale of a property.

##### Development and Construction Signs:

Item b.(1): Signage on a single residential lot should be limited to one (1) sign not greater than 6 feet in height and 32 square feet (4'x8') in area.

Item b.(2): Signage for a residential subdivision or multiple residential lots should be limited to one (1) sign at each entrance to the subdivision or on the lots to be build upon should be no greater than 6 feet in height and 32 square feet in area. Currently in Bay Creek, individual signs were not permitted.

Item b.(3): Signage for non-residential uses in residential districts should be limited to one (1) sign no greater than 6 feet in height and 4 square feet (2'x2') in area.

Item b.(4): Signage for commercial or industrial projects should be limited to one (1) sign per street front no greater than 6 feet in height and 12 square feet (3'x4') in area for projects on parcels 5 acres or less. For projects on parcels larger than 5 acres, signage should be no greater than 6 feet in height and 32 square feet in area.

Item b.(5): Development and construction signage must be removed not later than 7 days following issuance of an occupancy permit for any or all portions of the project.

There was some discussion regarding how temporary was temporary. Joan Natali stated that some signs had been in place for over 4 years such as "For Sale" signs and developer signs on properties without any activity. Tom Bonadeo stated that the Town could not limit the time to sell a property to which Bruce Brinkley agreed. Malcolm Hayward asked what would happen to a sign if the developer of the property were to go bankrupt. Tom Bonadeo stated that typically, another entity, such as another developer or financial institution, would take over the property.

Joan Natali suggested the addition of language requiring signage be maintained in good condition to which the Commissioners were in agreement.

Photos of various signs in Town which were not in compliance to the ordinance were reviewed. Tom Bonadeo stated that letters had been sent to the individuals placing the signs giving them 30 days to remove the signs. The 30 days had lapsed, so the Town would be removing the signs accordingly.

#### **NEW BUSINESS**

There was no new business to review.

#### **OTHER**

Bruce Brinkley noted that a portion of the exterior wall of the old school had collapsed. Tom Bonadeo stated that the wall had collapsed several months ago shortly after the earthquake. The Town had filed an insurance claim which was included as part of the sale of the building to Echelon Resources.

Dennis McCoy asked about the status of appointing new members to fill the two (2) vacancies on the Commission. Tom Bonadeo stated that two (2) applications had been received and interviews needed to be scheduled with the Town Council. With the number of issues currently under review, it was difficult to schedule another meeting with Council. At this point, it was determined to wait until the new Council was in place before interviews were scheduled with the applicants.

Malcolm Hayward stated that something was needed to allow businesses to advertise during the summer months. Joan Natali stated that there were two (2) issues: i) Advertising of services off premises such as the wave runners at the Harbor; and ii) Businesses on side streets. There was much discussion and Malcolm Hayward suggested that the Town could place signage at the Harbor and in Town listing the names of the various businesses and added that if the Town were to accommodate the business owners through the 3-month summer season, maybe the business owners would not abuse the signage ordinance. Tom Bonadeo stated that he would like to publish a Signage Brochure. Business owners were aware that the Town had a sign ordinance and a permit was required but the majority of the business owners did not come to the office to apply for a permit or to ask questions regarding what was allowed. Bruce Brinkley asked whether the businesses on the side street, such as Drizzles, the Old Fire House, etc., place hanging signs on their buildings similar to the sign at Kelly's. Tom Bonadeo stated that they could, but have not come to the office to ask about it.

**ANNOUNCEMENTS**

There were no announcements.

**Motion made by Joan Natali, seconded by Malcolm Hayward, to adjourn the Planning Commission meeting. The motion was approved by unanimous consent.**

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Chairman Bruce Brinkley

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Town Clerk

DRAFT

# Planning Commission Staff Report

**From:** Tom Bonadeo

**Date:** June 5, 2012

**Item:** 4C – Reports

**Attachments:**

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## Item Specifics

1. The Northampton County website is [www.co.northampton.va.us](http://www.co.northampton.va.us) and contains the updated information from county meetings. The Northampton Planning Commission also meets on this night and a copy of their agenda is attached when available prior to printing. Attached is some information on some public hearings for the County.
2. The Harbor Redevelopment Plan –Boyto & Boyto has completed the Harbor Bath House project and it is open for business. Take some time for a visit to the area.
3. The Restaurant Building for the Harbor is nearing its final inspection as this is written and may be open by the time of the Planning Commission meeting.
4. The parking lot servicing the new boat slips, bath house and restaurant has been covered with shells. The spaces will be laid out shortly. During the Tall Ships event no parking will be allowed in the area and alternate parking will be provided on the railroad property.
5. The old WWTP is undergoing demolition. The steel is awaiting removal by truck. The next stage of demolition is the polishing pond and one bid was received on Tuesday.
6. VDOT will be coating all the asphalt streets during May. This project has not been very smoothly run at all. As of Tuesday, May 29<sup>th</sup> only a portion of Randolph has been done. We'll see how it progresses from here.
7. Work on the beach has been completed for the spring. The volleyball court has been installed and most of the fence has been erected to keep people off the dunes and on the paths. Additional sand has been placed on the north end of the beach for the summer.
8. The Historic Review Board met last month. The Board reviewed and approved one remodeling project for the duplex at Tazewell and Nectarine.
9. Numerous remodeling projects are underway throughout town. New homeowners are fixing up second homes as the prices continue to be low. We have some new opportunities for spec homes maybe later this summer.
10. There some possible new restaurant offerings coming soon. Keep watching Mason Avenue for announcements. The Hotel Cape Charles has opened under a temporary Certificate of Occupancy. An open house was held over the weekend with great attendance. The owners are really excited about the prospects. Some items are yet to be completed in relation to the exterior of the building.

11. VDOT is working on crossing signs for 642, Old Cape Charles Road. These signs will allow golf carts to cross at specific areas. This should aid in another cart path route connecting Bay Creek Golf Community and the Historic District.

## Tom Bonadeo

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**From:** kdowning@co.northampton.va.us  
**Sent:** Wednesday, May 23, 2012 12:58 PM  
**To:** wbaines@microenterprises.com  
**Cc:** obxgolf@aol.com; byork@tbaonline.org; rcmorrison2@verizon.net;  
planner@capecharles.org; rwest@esva.net  
**Subject:** Public Notice for Northampton Planning Commsn.

### Public Notice

The Northampton County Planning Commission will meet on Tuesday, June 5, 2012, at 7:00 p.m. in the Board Chambers located at 16404 Courthouse Road in Eastville, Va., for the purpose of conducting public hearings on the following matters.

1. **Special Use Permit 2012-02:** Dennis & Elizabeth Latimer have applied to operate a Bed & Breakfast at 4138 Royces Way on property containing 1.26 acres of land located west of Lankford Highway on the Chesapeake Bay. The property is zoned ESD-A1 Existing Subdivision District-Agriculture 1 and is described as Tax Map 117, double circle 3, parcel A2.
2. **Zoning Text Amendment 2012-07: Eastern Shore Communications, LLC** has filed to amend the Northampton County Code, Chapter 154 Zoning Code, by revising the following section: **§154.109 Wireless Communications Facilities Standards** to accommodate and support wireless broadband service.
3. **Zoning Text Amendment 2012-08: The Northampton County Board of Supervisors** has filed to amend the Eastville Zoning Ordinance, specifically **Article II, §2-3 Specific Definitions and Article XV Signs**, in order to accommodate a proposed sign designating the entrance into the County Government Complex. The amendment includes a new definition for "Government Sign;" the elimination of the definition of "Public Sign;" a modification to the section dealing with sign illumination; and an explanation of the new sign types.

The Town Council of Eastville will conduct a public hearing on Item 3 above on Monday, June 4, 2012, at 7:00 p.m. in the Town Office located at 5248 Willow Oak Road, Eastville, Va.

The Northampton County Board of Supervisors will conduct public hearings on Items 1 and 2 above on Tuesday, June 12, 2012, at 7:00 p.m. in the Board Chambers.

All applications will be on file and open to public inspection in the office of the Clerk of the Board of Supervisors and in the Department of Planning & Zoning located at 16404 Courthouse Road, Eastville, VA. The file for Item 3 will also be available for public inspection in the Eastville Town Office, 5248 Willow Oak Road, Eastville, VA. Anyone wishing to comment on the above items is invited to attend the meetings and make their comments known.

Handicapped assistance available: Please telephone (757) 678-0440, extension 516 at least 48 hours in advance.

Advertise: May 23, 2012  
May 30, 2012

Sandra G. Benson, AICP  
Director of Planning & Zoning

## Public Notice

The Northampton County Planning Commission will meet on June 5, 2012 at 7:00 p.m. in the Board Chambers located on the second floor of the County Administrative Office building at 16404 Courthouse Road in Eastville, Va., for the purpose of conducting public hearings on the following Agricultural and Forestal District (AFD) applications.

- (1) AFD 2012-01: Addition to Dalby's AFD filed by Edward T. Bradshaw for 44 acres located near Cape Center with frontage on the north side of Capeville Drive (S.R. 683) and the east side of Siding Drive (S.R. 683), described as Tax Map 105-A-28.
- (2) AFD 2012-02: Addition to Picketts Harbor AFD filed by W. T. Nottingham, Jr., for 50.7 acres located in the Cheapside area located on the west side of Arlington Drive (S.R. 645) and the northern side of Pond Drain, described as Tax Map 105-A-102.
- (3) AFD 2012-03: Addition to Jamesville AFD filed by the David B. Tankard Family LLLP for 52.182 acres located along Old Neck Road (S.R. 612), described as Tax Map 8-A-1.
- (4) AFD 2012-04: Addition to Weirwood AFD filed by Branden Gordon for 55.21 acres located along Red Bank Road (S.R. 617), described as Tax Map 31-A-19.
- (5) AFD 2012-05: Addition to Jamesville AFD filed by Walkley Johnson, Jr., and Johnson Cove, LLC for 175.99 acres located along Johnson Cove Road , Concord Wharf Road and Mt. Airy Lane in the Concord Wharf area, described as Tax Map 1, double circle A, parcels 3 and 3A.

After receiving recommendations from the Northampton County Local AFD Advisory Committee and the Planning Commission, the Northampton County Board of Supervisors may act to adopt, modify or reject the above applications after its public hearings scheduled on Tuesday, June 12, 2012 at 7:00 p.m. in the Board Chambers.

Any owner of additional qualifying land may apply to join those applications as listed above with the consent of the Board of Supervisors, at any time before the public hearing that the Board must hold on the applications as described above. Any owner who joined in the above applications may withdraw his/her land, in whole or in part, by written notice filed with the local governing body, at any time before the Board of Supervisors acts pursuant to §15.2-4309. Additional qualifying lands may be added to an already created district upon separate application pursuant to §15.2-4310 of the Code of Virginia.

All applications will be on file and open to public inspection in the office of the Clerk of the Board of Supervisors and in the Department of Planning & Zoning located at 16404 Courthouse Road, Eastville, VA. Anyone wishing to comment on the above items is invited to attend the meetings and make their comments known.

Handicapped assistance available: Please telephone (757) 678-0440, extension 516 at least 48 hours in advance.

Advertise: May 23, 2012  
May 30, 2012

Sandra G. Benson, AICP  
Director of Planning & Zoning

# Planning Commission Staff Report

**From:** Tom Bonadeo  
**Date:** June 5, 2012  
**Item:** 5A – CUP and Zoning Map Amendment  
**Attachments:** Current map of area

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## Background

The Town Council wishes to amend the zoning map of the Town of Cape Charles. The original design of the lots in Cape Charles included residential lots on both the north and south sides of the central park area as shown on Bauman's Map. The lots along South Park Row and the western half of North Park Row have been used for single family houses as intended. Prior to the introduction of zoning ordinances the lots on the northeast corner were used to construct a school to replace the aging school in the 600 block of Monroe Avenue.

The park property and the school property were zoned Open Space when Cape Charles adopted a zoning ordinance. In the zoning ordinance process the definition of Open Space was left out until recently when the Planning Commission and Council adopted a definition for the zone. Schools, churches, Neighborhood Community Centers and Adaptive Reuse are not part of that definition but they are part of the R-1 definition, mostly with Conditional Use Requirements. This would change the school from a nonconforming structure to a legal structure in the R-1 Zone.

The Council also requests the Planning Commission Review of a Conditional Use Permit for Neighborhood Community Center and the Adaptive Reuse of the School. The Council has received an unsolicited proposal for the Historic Restoration of the building. This proposal includes the restoration for tax credits that requires the review and approval of the Virginia Department of Historic Resources for both Federal and State tax credits. The Adaptive Reuse of the building for 16-17 apartments and/or Neighborhood Community Center or a combination of both is within the R-1 zone.

## Item Specifics

The Zoning Map Amendment is for lots 281 through 287 and the area that was originally North Park Row. This is the area now used for the school, parking, basketball court, tennis court and kids park. This amendment is to change the zoning from Open Space (OS) to Single Family Residential (R-1) so that the adaptive reuse for apartments and/or a Neighborhood Community Center can be applied. Neither of these uses is allowed under the Open Space definition.

The CUP process requires that the permitted use(s) will not:

1. **Adversely affect the health, safety or welfare of the persons residing or working in the neighborhood of the proposed use or adversely affect the other land uses within the particular surrounding neighborhood.**
  - a. The residential and community use will restore the building to a safe condition and correct the problem of broken windows and a location for vandalism.
  - b. The basketball court will likely move as on-site parking is required for both the residential use and the community center use. The basketball court currently attracts young adults from outside the Town area and language has been an issue for children playing in the adjacent Kid's Park area
2. **Be detrimental to the public welfare or injurious to property or improvements in the neighborhood.**

- a. The historic restoration and adaptive reuse will be an investment of over \$2 million dollars in the neighborhood in an area that has been depressed for over 20 years. This restoration will improve the neighborhood values with a newly renovated building.
  - b. The density of the site will be no more than the western park row site or the underlying zoning of R-1. This property covers the equivalent of 7 town lots or the equivalent space for 7 single family residences.
  - c. The residential use would require only about 17 spaces of off street parking while the community center would likely require 50 spaces if fully utilized. Since the Town's population will not likely grow significantly in the next few years it is unlikely that the community center use would cause an undue parking problem except for some large function possibly involving the use of the park.
  - d. The historic renovation in either use will be an asset to the improvements in the adjacent Park.
- 3. Be in conflict with the purpose of the Comprehensive Plan.**
- a. The current Comprehensive Plan stresses the preservation of contributing historic structures and the Virginia Department of Historic Resources in partnership with the U.S. Secretary of the Interior have promulgated rules and tax credits especially for the adaptive reuse of these contributing structures.
  - b. Page 44 of the Plan specifically sets multiple goals, two of which are:
    - i. Provide for the adaptive reuse of the school
    - ii. Establish a community center.

This application meets the requirements of the zoning ordinance for conditional use permits and the adaptive reuse in the R-1 Zone.

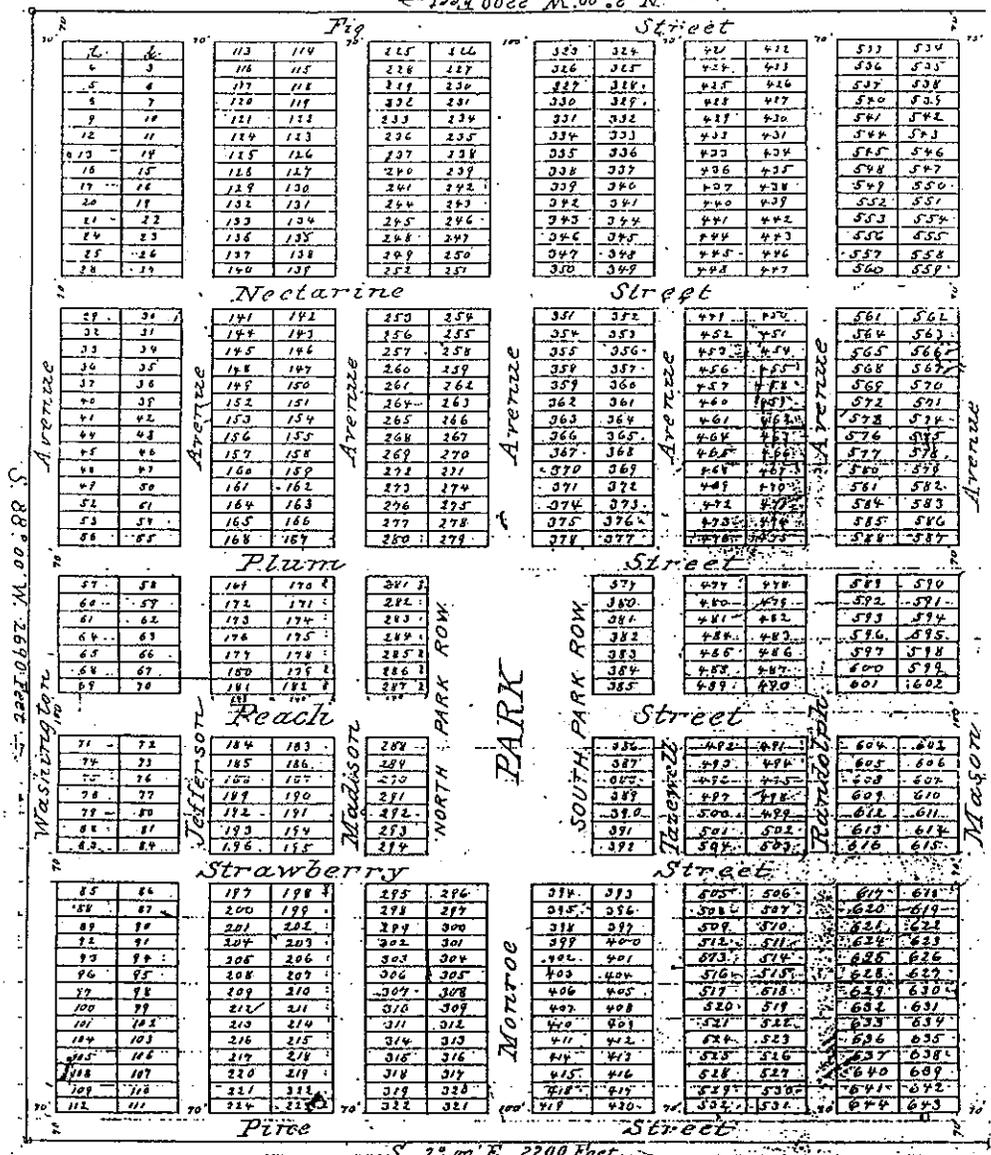
### **Recommendations**

Review public comment and discuss the Zoning Map Amendment and CUP. Move to recommend the zoning map amendment from OS to R-1 and recommend approval of the CUP for a Neighborhood Community Center and/or Adaptive Reuse for up to 17 residential units.



BAUMAN'S MAP

← 2200 Feet M. 00. 22 N.



Map #6 (plat map)

# Planning Commission Staff Report

**From:** Tom Bonadeo

**Date:** June 5, 2012

**Item:** 5B – Sign Ordinance

**Attachments:** Ordinance pages reviewed and to be reviewed

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## **Background**

The sign ordinance has had review and has been partially marked up. Attached are pages 10 - 15. This work session will be to mark up these pages.

## **Item Specifics**

Please take time to read through the attached version and be prepared to mark up these pages.

Also review the marked up pages from last meeting.

## **Recommendations**

Review the new code previously discussed.

# Planning Commission Staff Report

**From:** Tom Bonadeo

**Date:** June 5, 2011

**Item:** 5C – Harbor Zone - Density in Residential over Commercial CUPs

**Attachments:** Table of densities

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## Item Specifics

In December of 2011 the Residential over Commercial Density was reviewed. This discussion is intended to continue the review and complete a recommendation to the Town Council on possible density requirements that should be added to the Zoning Ordinance.

The current economic situation has created new building challenges for real estate developers. The Harbor District Zone is the least developed area of Town. Two large projects were submitted and approved under this zoning ordinance. Both projects had positive growth potential while showing some of the potential weaknesses of the ordinance. The largest weakness is the unrestricted density for residential development in the commercial zone, particularly where that zone is adjacent to another residential or commercial zone of with a regulated density.

## Discussion

A review of the "control" items that are in the ordinance and some that are missing is in order. Control items are those parts of the ordinance that can be measured such as:

1. Setbacks measured in feet.
2. Elevation is measured in feet and/or stories.
3. Density can be measured in units per acre or other units of measure.
4. Open space is measured in a percent of gross square feet.

This list is only an example of some of the items that might benefit from review. Density is not defined in any zone except the basic residential zones. This should be reviewed and potentially added to Harbor District and other commercial zones where residential use is allowed by Conditional Use Permit (CUP).

The current commercial zones allow residential over commercial space. The Harbor District Zone also allows partial use (50%) of the first floor as residential space. All residential space must have its own entrance at street level. There is no limitation of the number of units on a property in the existing ordinance and this has been determined by the Planning Commission and Town Council deciding what density does or does not harm the neighborhood. The developer wants the densest approval to maximize return and the Council and Commission want to control density to conform to the surrounding neighborhood. This debate is extremely subjective and debates can last a very long time.

The planning book "Planning the Built Environment" has numerous tables and guidelines that are generally used for this type of definition. We will review these tables and review the existing density of other areas of Cape Charles.

## Recommendation

Review and discuss the density charts and old CUPs.

streets, and facilities serving the local population (such as local schools, local parks, and local shopping facilities). The area specifically excludes land uses serving populations outside of the area being analyzed (such as state universities, regional shopping centers, and regional airports). The land area may or may not include vacant land.

**Jurisdiction-wide residential density.**—The number of dwelling units per unit area (such as square miles or square kilometers) of land within the political boundaries of a jurisdiction. (The area usually includes residential, commercial, industrial, recreational, and institutional land uses, as well as vacant land, military bases, airports and bodies of water.) Residential density is most often expressed in terms of dwelling units (DU) per acre (ac). Sometimes, however, the inverse of this term, lot area per dwelling unit, is used.

**USING RESIDENTIAL DENSITY AS A DESIGN TOOL**

Residential density, expressed in *dwelling units per acre* (DU/ac) is used as an overview planning tool.

Residential density, expressed in *lot area per dwelling unit*, is used as a regulatory tool (e.g., in specific zoning regulations).

- When calculating the yield for single building sites, density figures (expressed in terms of square feet of lot area per DU) are used.
- For a site that is to be subdivided (with streets to be subtracted from the gross area) the number of gross acres in each land use is multiplied by the gross residential density of that land use which results in an approximate yield in number of dwelling units.
- For a site that is to be subdivided (with streets, parks, shopping centers, and schools), the gross area of the tract in

acres is multiplied by the neighborhood density figure which is closest to the typical type of dwelling that will be built on the property; this will produce an approximation of the number of dwelling units that the area will produce.

It must be noted that the above calculations will give approximations only. For more precise figures, one must specify how many units of each building type will be built, the average lot area per dwelling unit for each building type, the percent of the area that will be used for streets, and the percent of the area that will be used for community facilities. This detailed analysis can usually be made only after a fairly detailed site plan has been developed.

Table 14.1 reports typical residential densities. Note that these are generalized approximations only, and that the values reported in the table are not standards that apply everywhere.

**COVER AGE AND FLOOR AREA RATIO**

Some additional terms are used when describing or calculating residential density:

**Coverage.**—The area of a building lot that is covered by a structure, expressed in square feet; the proportion of a building lot that is covered by a structure, expressed in percent or in decimal parts.

**Floor area ratio (FAR).**—The ratio between the total gross floor area on all stories of a structure to the gross area of the building lot on which the structure is located.

Floor area ratios are often used in regulating the density of development of commercial and industrial properties; they are rarely used in regulating residential properties. This is because experience has shown that when a FAR is the primary regulation in apartment zoning, property owners tend to crowd their properties with many small apartment units

Table 14.1. Typical Residential Densities

Residential Use	Lot Area (sq. ft./DU)	Net Residential Density (DU/acre)	Gross Residential Density (DU/ac)	Neighborhood Residential Density (DU/ac)
Furial estates	20 acres	.05	.05	.05
Furial residential	5 acres	.20	.16	.15
Low-density, single family	20,000	2.2	1.7	1.5
Medium-density, single family	8,000	5.5	4.0	3.5
High-density, single family	5,000	8.7	6.5	5.2
Duplexes	4,000	11	8	6
Low-density row house	3,500	12	8	6
High-density row house	2,500	17	12	10
Low-density townhouse	5,400	8	6	5
High-density townhouse	2,700	16	12	10
1-story apartments	2,400	18	13	10
3-story apartments	1,200	36	25	20
6-story apartments	600	72	50	35
12-story apartments	300	145	100	60

\* DU/ac = dwelling units per acre  
 • sq. ft./DU = area in the building site in square feet per dwelling unit

rather than fewer moderate-sized units. (In some instances, this may be a desired effect; in others, it may be considered an adverse impact.)

Figure 14.1 illustrates a variety of building coverage figures. It may be noted that very low coverage figures are usually found only in low-density suburban and rural areas, and that very high coverage figures are usually found only in dense urban areas. A coverage of 100 percent is extreme and is almost never found.

Figure 14.2 illustrates three sites, each of which is developed to a FAR of 1.0 (that is, each site has a structure on it which is equal in floor area to the land area of the site). The figure on the left shows development when the building coverage is 100 percent; the figure in the middle shows development with a

coverage of 50 percent; the one on the right has a coverage of 25 percent.

Figure 14.3 illustrates the same three sites, but this time each of them is developed to a FAR of 0.5. Since it is impossible to develop a site at 100 percent coverage while having a FAR of 0.5, no structure is shown in the left-hand diagram.

Figure 14.4 again illustrates the three sites, but this time each one is developed to a FAR of 4.0.

**RELATIONSHIPS AMONG BUILDING TYPE, RESIDENTIAL DENSITY, AND FLOOR AREA RATIO**

Table 14.2 presents a number of examples of residential buildings that might be built under a variety of assumed conditions.

Table 14.2. Relationships Among Building Type, Residential Density, and Floor Area Ratio

Figure	Type of Structure	ASSUMED SPECIFICATIONS				RESULTING PATTERN			
		Lot Size (sq. ft.)	Floor Area per DU (sq. ft.)	Parking Spaces per DU	Number of Stories	Lot Area per DU (sq. ft.)	DUs per Net Acre	Floor Area Ratio (FAR)	Coverage (percent)
A	Detached, single-family house	40,000	2,000	not shown	1	40,000	1.1	0.05	5
B	Detached, single-family house	10,000	2,000	not shown	2	10,000	4.4	0.2	10
C	Detached, single-family house	5,000	2,000	not shown	2	5,000	8.7	0.4	20
D	Row house	2,500	2,000	not shown	2	2,500	17.4	0.8	40
E	Fourplex	10,000	1,000	1.0	2	2,500	17.4	0.4	20
F	2-story garden apartment	20,000	1,000	1.0	2	1,650	28	0.6	30
G	3-story garden apartment	20,000	1,000	1.0	3	1,100	40	0.9	30
H	3-story apartment over parking	20,000	1,000	1.0	3 res 1 pkg	690	63	1.4 1.9*	48
I	5-story apartment over 2-story parking	20,000	1,000	1.0	6 res 2 pkg	350	125	2.9 3.8*	48
J	6-story apartment over 1-story parking	40,000	1,000	1.0	6 res 1 pkg	400	109	2.5 3.5*	42 res 100 pkg
K	12-story apartment over 1-story parking	40,000	1,000	1.0	12 res 1 pkg	400	109	2.5 3.5*	21 res 100 pkg
L	12-story apartment over 3-story parking	40,000	1,000	1.0	12 res 3 pkg	214	200	4.7 6.9*	39 res 54 pkg

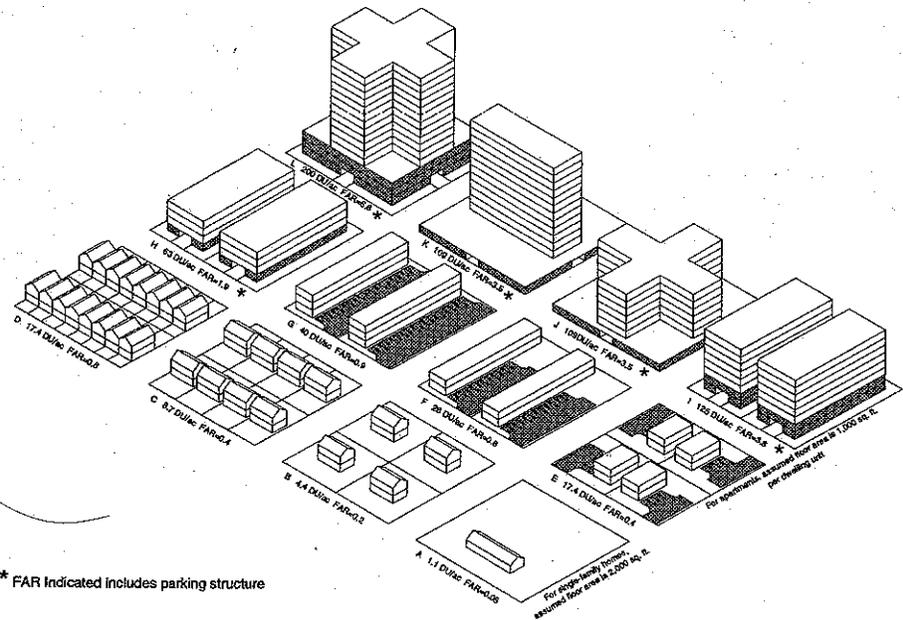
\* DU = dwelling unit  
 \* This FAR counts floor area in the structure devoted to both residential and parking uses. Other FARs, not marked by an asterisk, are calculated on the basis of residential floor area only.

Figure 14.5 illustrates what the buildings in our calculations that each dwelling unit from Table 14.2 would look like if they were to be built.

The left-hand row in Figure 14.5 contains only single-family homes, ranging in density from a low-density suburban home with a density of 1.1 DU/ac. to urban row houses at a density of 17.4 DU/ac. It has been assumed

in our calculations that each dwelling unit has a floor area of 2,000 square feet. The space for parking cars has not been shown in these illustrations because off-street parking presents no serious problems at these residential densities.

The central row in Figure 14.5 contains low-rise apartment houses, ranging in den-



\* FAR Indicated includes parking structure

Figure 14.5. Relationships Among Building Type, Residential Density, and Floor Area Ratio