

CITY OF RICHMOND

1996 MASTER PLAN UPDATE

Report to the City of Richmond
Department of Community Development on the
Potential Impacts on Water Quality of
Existing and Potential Land Uses
East of Interstate 95 and South of the James River

Prepared by the Staff of the
Richmond Regional Planning District Commission



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Report to the City of Richmond
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Existing and Potential Land Uses East of Interstate 95 and South of the James River

For many years the City has been involved in an aggressive program to protect the natural environment. One major element of this program has been the development of a long range strategy to deal with the issue of the City's Combined Sewer Overflow. In addition, the City has been involved in the development of a comprehensive set of plans, policies and ordinances to protect water quality. These efforts were done in part to meet the requirements of the Chesapeake Bay Preservation Act, passed by the General Assembly 1988. Working with the Chesapeake Bay Local Assistance Department (CBLAD), over the last several years the City has examined all of its water quality protection programs. Specifically, the City's zoning and subdivision ordinances were amended in 1991. In 1993, the City adopted an Environmental Element to the Master Plan. In 1994, the City published the Chesapeake Bay Public Information Manual. Taken together, the ordinance changes, the Environmental Element and the Public Information Manual give the City a solid base for protecting water quality and meeting the requirements of the Preservation Act. Some additional work is still needed, however, to come into full compliance with the provisions of the Act.

Currently, the City is involved in an extensive update of its Master Plan. As part of this update, the City contracted with the Richmond Regional Planning District Commission (RRPDC) to assist with the review of the City's Chesapeake Bay Program. This program has been reviewed by the Chesapeake Bay Local Assistance Board and found to be consistent with the Act's regulations subject to the revision of certain elements of the Master Plan. City and RRPDC staff are currently addressing these issues. One such issue was a request from the Chesapeake Bay Local Assistance Department that the City "reexamine existing and proposed land uses in the context of water quality protection for the I-95 floodplain area in the next Plan revision." The purpose of this report is to examine this issue and present recommendations for consideration as part of the Master Plan update.

Study Area

The study area is the industrial area located east of I-95, south and west of the James River and north of the city limits. The area in question includes approximately 71 separate tax parcels of varying size covering a total of 1,150 acres.¹ The study area does not, however, exist in a vacuum. A recent report by Dr. John Accordino of VCU states that the study area is part of a larger area of approximately 3,700 acres which makes it the largest industrial area in the City.²

¹A Land Use Plan for the Tidal James River Basin for the City of Richmond", prepared by David Maloney for the Department of Urban Studies and Planning, Virginia Commonwealth University, Richmond, Virginia, May, 1990, page 1.

²Economic Element Part II, Industry Land Use and Development Implications, prepared for the City's Department of Community Development as part of the 1996 Master Plan Update by John Accordino, Department of

Existing Land Uses

When one looks at the City's existing land use maps or actually views the study area from I-95 or Commerce Road, one sees an area that is predominantly developed as industrial or heavy commercial uses. However, an examination of aerial photographs shows that a substantial portion, perhaps half of the land area, is undeveloped. Examination of additional information, such as the Environmental Element of the Master Plan, shows that a large portion of the undeveloped land is actually considered environmentally sensitive lands. (These are discussed later.) Following is a brief discussion of the land uses within the study area.

On the north end of the study area is the City's sewage treatment plant. Immediately adjacent and to the east is Ancarrow's Landing, the only public access to the James River in the study area. Located here are a boat ramp, associated parking and an area for bank fishing.

Accessibility to the entire study area is limited. This is due to elevation of I-95 along the entire western portion of the study area. In this particular area, access is via Brander Street which passes beneath I-95. In addition, traffic must also pass through a gate in the Richmond Flood Wall, which can be closed in times of high water. All traffic to and from these two facilities must use this one entrance.

To reach the portion of the study area to the south, one must travel back to Commerce Road. A short drive south brings one to Goodes Road, the second entrance into the study area. Again, one must pass beneath I-95 to enter the area. In addition, the south end of the flood wall parallels Goodes Road west of I-95.

Development in this area is limited to a petroleum pipeline company, a petroleum storage facility and a large rock quarry. According to estimates, the anticipated life expectancy of the quarry is up to fifteen years. However, certain factors could contribute to a portion of this site being used by the owner for an even longer period of time. All of the material that is extracted from the quarry is shipped by barge. Therefore, the only associated traffic is employees entering and leaving the site. The location of the quarry immediately adjacent to the river is very important. A significant factor in the price of the delivered rock product is transportation. Material that can be sent by barge can be priced very competitively.

Again, to move south in the study area, one must return to Commerce Road and travel south to the intersection with Lumpkin Road. This road intersects with the major north-south access road for the remainder of the study area--Deepwater Terminal Road. At the very north of this area is a settling area used by Sunoco, a paper manufacturing company. Three existing small settling ponds are currently being reclaimed through a composting process. When this project is finished,

sometime within the next ten years, one large pond will remain. This large pond will also be eliminated once the current project is complete, again within a ten year time frame. Immediately south is another large rock quarry. The life span of this quarry is approximately twenty to thirty years. However, as with the quarry to the north, there are circumstances which could develop that would keep this operation open for a longer time frame. Materials from this site are used for the production of concrete and asphalt on-site, a portion of the material is shipped out via truck and a small portion, approximately 5,000 tons per week, is shipped by barge, about one per week. This operation contributes a high level of heavy truck traffic to Deepwater Terminal Road. For the record, each of these two quarries mined between 900,000 and 1,000,000 tons of granite in 1995.

Immediately south of the quarry is a mixture of heavy commercial and industrial uses including heavy truck and trailer sales and repair, chemical and petroleum companies and various industrial sales and service companies. Also, located in this area is a large recycling operation engaged in a variety of activities including the disassembly of automobiles. These activities will soon include the disassembly of barges. Three of the uses in this portion of the study area have docking facilities on the river.

Continuing south, one comes to the intersection of Bells Road and Deepwater Terminal Road. Bells Road passes underneath I-95, thereby providing the third and final access to the area west of the study area. South of this intersection lies the Phillip Morris training center, warehouses and the Port of Richmond Terminal Facility. The Port itself is a major water related use occupying a substantial tract of land. Plans exist for expansion of the Port to the south.

To summarize, a visitor observing the study area from the western boundary sees a vital, thriving industrial area. A substantial portion of the study area has been developed and is in use currently. Uses in the northern portion of the study area tend to be more land intensive, for example the sewage treatment plant and the two quarries. Moving south uses become more varied and include such uses as manufacturing, truck sales and repair, moving and storage companies, the campus-like Phillip Morris training center and the Port of Richmond. Traffic volumes are high on Deepwater Terminal Road and include a great deal of heavy truck traffic. All of the buildings in the study area appear to be in use. This in and of itself speaks well for this particular industrial area. All of this gives the southern portion of the study area a real image of activity and prosperity. (This is in contrast to the relatively quiet nature of the two northern portions of the study area.)

Viewing the study area from the river gives one a different prospective. From the river, the study area appears quiet and fairly unspoiled. The topography and natural vegetation hides much of the industrial development. The only visible signs of industrial development along many portions of the river are the loading facilities along the river and some towers which rise above the tree line.

Environmentally Sensitive Areas

The City's stated objective for Environmentally Sensitive Areas, as found in the City's Environmental Element is to "continue to identify, protect, and enhance environmentally sensitive

areas within the city consistent with their role in the urban ecosystem and contribution to water quality." Due to their proximity to the James River, the environmentally sensitive areas in the study area can have a substantial impact on water quality in the James River and ultimately the Chesapeake Bay. Following is a brief description of the environmentally sensitive areas in the study area.

1. Wetlands. Wetlands provide a number of benefits. Regarding water quality, wetlands serve as filters, reducing the flow of sediments into water and reducing the flow of nutrients, chemicals and organic pollutants into open water. In addition, wetlands help to reduce the impacts of flood waters and protect upland areas from erosion. Finally wetlands serve as natural habitat for a variety of fish and wildlife.

There are two types of wetlands: tidal, which are formed and influenced by tides and non-tidal, which are located adjacent to rivers and streams and in low areas. According to the National Wetlands Inventory of 1990, there are no tidal wetlands in the study area. This is due to steep slopes along a portion of the James River as well as the large amount of fill, rip rap and other man made structures that have been constructed along the river over the years. There are some scattered non-tidal wetlands. While these non-tidal wetlands may be significant on one particular site, they are a relatively small portion of the entire study area.

2. Flood Plains. Perhaps the most obvious benefit that flood plains provide is the temporary storage for flood waters. In addition, flood plains filter runoff, slow the velocity of flow during floods and provide habitat for wildlife. Development in flood plains can work to reduce the benefits that flood plains offer. The two northern portions of the study area are entirely covered by the one hundred year flood plain. In the large southern portion of the study area, the flood plain is reduced, but still covers approximately the entire eastern half of the land. Fortunately most of the development is west of the flood plain. However, there are some significant activities that are in the floodplain. One area that the flood plain does impact is the Port of Richmond. And while the construction of the flood wall has limited direct impact on the Port, there are some impacts that will be beneficial to the Port. During the analysis of the flood plain in the study area by Army Corps of Engineers, discrepancies were found. This information has been forwarded to the Federal Emergency Management Agency. Preliminary information indicates that new flood plain maps will be drawn and that the Port will gain some developable land due to a slight narrowing of the official flood plain.
3. Steep Slopes. Steep slopes offer a variety of benefits including wildlife habitat, wilderness areas and buffers between land uses. Steep slopes can also have detrimental impacts when improperly managed. Inappropriate development can reduce vegetation, leading to erosion and water quality problems. The City's Environmental Element defines steep slopes as areas with a minimum grade of 20%. These are found along the shoreline on the very northern portion of the study area and in the areas of the sewage treatment plant. In the southern portion, steep slopes run approximately through the middle of the study area until one reaches the southern portion, where the steep slopes are closer to the river.

4. The James River. The river itself is an important environmental element of the study area. Not only is the river a receptor of any pollution that runs off the land; it acts as a conduit to funnel that pollution downstream. While the river in the study area is essentially on its way out of the City, there are potential negative impacts on downstream users. These potential impacts include damage to fish, shell fish and adequate vegetation downstream as well as potential negative impacts on water users downstream.

Environmental Issues in the Study Area

There is always a concern when heavy commercial and industrial uses occur in close proximity to environmentally sensitive areas. These concerns include both the protection of the environmental feature from encroachment as well as protection from the results of activities that take place on the industrial or commercial lands.

Areas such as flood plains and wetlands have not always been looked upon as lands that need to be protected. While our understanding of the role these areas play in the environment has increased, there are still individuals that look upon these areas as "wasted space." This sometimes leads to the filling of these areas for development or the dumping of materials that could be detrimental to the resource and the water quality of the James. The extensive flood plains in the study area need to be viewed in light of the important environmental role that they play. The same statement applies to wetlands.

Another issue related to the study area is the possibility of damage to the environment and especially water quality through unintentional acts. There are activities in the study area that need to use materials that are classified as hazardous, sometimes on a daily basis. Whenever this type of material is used, there is the possibility that spills or other types of accidents can happen, no matter how carefully the material is handled. If not noticed and properly contained, these accidents can have significant impacts on environmentally sensitive lands.

Two sites in the study area are on the EPA Comprehensive Liability Information System or CERCLIS list. (These are more commonly referred to as Superfund sites.) This is a list of sites that are considered to be contaminated with hazardous substances. There are 17 sites in Richmond. The two in the study area are Deepwater Terminal at 3400 Deepwater Terminal Road and Philip Morris at 4200 Deepwater Terminal Road. The CERCLIS is cumulative, however and does not take into account sites which have been investigated and found to have low levels of contaminants or have undergone cleanup. Once on the CERCLIS list, the site is never removed for any reason. Therefore, the presence of a site on the CERCLIS list is not necessarily indicative of the level of severity of contamination on a site.

Another issue that relates to the current uses relates to the point source dischargers. In order for an industry to discharge water into a river or stream, the industry must meet Federal and State discharge requirements. In Virginia, industries are required to obtain a Virginia Pollutant Discharge Elimination System permit. While there are stringent rules covering the treatment of the water that

is discharged, there does exist the possibility of pollutants entering the storm water runoff or effluent that flows from these industries into the James. According to the Environmental Element, nine of the 12 water point source dischargers within the City are in the study area. While some of these discharges are from activities outside the study area and while these discharges are closely monitored by the state, the fact that so many of these discharges are in this area provides additional documentation as to the intensity of uses in this area. These point source discharges include Crown Petroleum, Citgo Petroleum, the City's Sewage Treatment Plant, Colonial Pipeline, Tidewater Quarry, Phillip Morris and Koch Fuels.

Part of the attraction of the study area is that it is adjacent to the James River. Besides the activity at the Port of Richmond, five other activities have and use river access. These include two rock quarries, petroleum storage facilities and a scrape iron salvage operation. The latest information available indicates that the existing facilities have the capacity to store slightly more than 18,000,000 gallons of petroleum. Should some type of accident or other activity happen, there is the potential for some environmental consequences. In addition, some of these facilities bring petroleum in on barges. Again, the chance for a spill exists, no matter how careful the operation is.

Another issue is non-point source or storm water run-off. This is the rain water that runs off a lot or street during a rain storm. If land is undeveloped, much of this rain water soaks into the ground and enters the ground water and eventually surface water. This soaking action is reduced or eliminated when buildings are built or land is paved for parking. The City does have an erosion and sediment control ordinance and the Chesapeake Bay ordinance to address this issue. However, a considerable portion of the study area is outside the designed Chesapeake Bay Preservation Areas. Therefore there is a concern that untreated storm water carrying pollutants, such as sediments, oils and other pollutants, may be quietly infiltrating the ground and surface water. To the benefit of the area, a considerable portion of many developed lots are not covered by buildings or paving, allowing the rain water to soak directly into the land, reducing runoff. At the same time, the types of land uses that have been or are presently located in the area could have contributed hazardous materials into the soils, increasing the potential for water pollution.

The purpose of this section is not to cause alarm, but to point out the very real issues that must be considered in evaluating any industrial area and its potential impact on water quality. While there do not appear to be any environmental problems in the study area, one must be aware of the potentials that exist for problems that could have negative impacts on water quality in the James River.

Development Strengths and Weaknesses

As pointed out in the aforementioned report by Dr. Accordino, a substantial portion of the City's industrial land is located along the I-95 corridor. While that report covered an area substantially larger than the study area, several points discussed in that report also apply to the study area. Following are some of these comments, modified or added to as appropriate for the study area.

Strengths

1. A substantial part of this area is relatively flat and out of the flood plain.
2. The area is visible and accessible from I-95.
3. The area is served by rail.
4. Most of the area has adequate water, gas, sewer, electric and telephone services.
5. All property is zoned M-2, which is the City's most intensive zoning and permits a variety of commercial and industrial uses.
6. While the intensity of uses in the area is rather diverse, the area itself is buffered from incompatible uses by I-95. As stated before, I-95 is elevated along the entire western boundary of the study area.
7. Access to this area is favorable. I-95 runs along the western boundary and Commerce Street provides three access points into the study area.
8. A considerable portion of the parcels in the study area extend from either Goodes Road or Deepwater Terminal Road to the river. These sites offer opportunities for some form of interaction with the river. One must note, however, that little has been done by existing property owners to take advantage of the river and the views it affords. Other than the few docks that have been constructed, there is very little interaction between the existing uses and the river.

Weaknesses

1. The study area shares one problem with almost all the industrial areas in the City--- few large tracts. While this is a problem for industries looking for large sites, the high degree of utilization of land in the study area indicates that some businesses want smaller tracts.
2. While there are some substantial buildings in the study area, most are small relative to the needs of many modern commercial and industrial users.
3. While the site is readily visible from I-95, access to individual sites is limited. As stated previously, there are four points of entry for the entire area. This is especially a problem for the southern portion of the study area. Related to this is limited parking at some sites which causes people to have to park off-site. Finally, while transit lines run in close proximity to the study area, the limited number of points of

entry reduces the attractiveness of using transit except for those with no other choice. There is discussion of an additional interstate interchange at Bellemeade Road, however, design constraints may prohibit the construction of access ramps that could provide direct entry into the study area.

4. One issue currently being addressed is concern over potential hazardous materials. Many potential purchasers are apt to be concerned over potential liability issues that can be associated with older industrial areas. The city is currently conducting an environmental assessment. This may help allay the concerns of potential developers.

Related Environmental Issues

There are other factors that need to be considered in any analysis of existing and potential uses for the land in the study area. First, since the study area is adjacent to the James River, the entire eastern boundary along the river is a Chesapeake Bay Preservation Area (CBPA). While an extensive discussion of Chesapeake Bay requirements is not possible here, suffice it to say that this designation does give the City some added tools to use to protect water quality while allowing the City to work closely with individuals interested in developing or redeveloping in this area.

Chesapeake Bay Preservation Areas are made up of three components: Resource Protection Areas (RPAs), Resource Management Areas (RMAs) and Intensely Developed Areas (IDAs). In delineating RPAs the City has included tidal wetlands, non-tidal wetlands connected by surface flow and contiguous to tidal wetlands or tributary streams, tidal shores and a 100-foot buffer adjacent to any of these features. RMAs consist of land areas contained within the 100-year floodplain, non-tidal wetlands exceeding one acre and not included in an RPA and a 500-foot wide setback from the edge of an RPA. In the study area, due to the RPA features along the river, for all intents and purposes, the RPA can be considered to be the tidal shore and the 100-foot buffer, although there may be individual cases where the RPA is wider. The RMA in the study area is essentially the flood plain or a 500-foot setback from the RPA, whichever is greater.

The City has designated the Port of Richmond an Intensely Developed Area (IDA) as part of its Chesapeake Bay Program. IDAs are areas of existing development and vacant land where development is concentrated and little of the natural environment remains. IDAs are used to encourage development where a net improvement in water quality is gained through application of various water quality performance criteria, particularly storm water quality requirements. One advantage offered to developers in IDAs is the possibility of the reduction or elimination of the 100-foot buffer requirement normally associated next to rivers and streams in a CBPA.

Another pertinent issue is the City's recommendation that a system of recreational trails and bikeways be developed along the entire length of the James River within the City, including the Study area. This trail system is envisioned as a linear park-like facility that would connect a network of open spaces. Greenways, with a variety of surfaces, would provide pathways for walking, jogging, cycling and other forms of recreation, as well as habitat and passageways for wildlife.

Finally, the Environmental Element of the existing Master Plan recommends the designation of an Environmental Protection Area as an overlay to the zoning designation in the study area. As proposed, this would encompass designated Chesapeake Bay Preservation Areas and other appropriate areas adjacent to CBPAs. This concept fits well with the greenway system discussed above. The purposes of these EPAs would be to:

1. protect water quality through the Chesapeake Bay Preservation Program;
2. protect natural vegetation;
3. develop continuous, non-motorized public access greenways or linkages; and
4. protect wildlife habitat, valuable visual open space and other features which are environmentally sensitive.

The Environmental Protection Area Overlay offers the City an excellent opportunity to develop an area that has both appeal to the general public and services to protect environmentally sensitive features. The issue facing the City is how to best blend together environmental protection, recreational opportunities and intensive industrial development.

Action Alternatives

After discussions with various City staff members, the City's Master Plan consultants and others, three action alternatives were developed. These are:

1. Take no action, leave as is without any City action.
2. Major intervention, such as down zoning.
3. A new approach which recognizes the importance of industrial and heavy commercial development, takes advantage of changes in land use activity as it occurs and recognizes the unique collection of natural resources along the James River.

Alternative 1

Taking no action at this time would be the most conservative approach for the City. This area is part of the large southern employment center concept that is being developed as part of the new Master Plan. While the area does have some weaknesses, the variety of industries that manage to thrive speaks to the desirability of this area for industrial and heavy commercial uses. To do nothing, however, could let opportunities escape. Two obvious opportunities are the quarries. While many years will pass before mining operations cease, now is the time to begin to imagine what could happen at these two sites. In addition, a lack of action may lead to environmental problems which could threaten economic development in the area as well as surrounding neighborhoods.

Alternative 2

Major intervention, such as down zoning to reduce potential threats to water quality is another alternative. Admittedly, some of the uses could pose threats to water quality. Eliminating these uses, over time, could lessen potential impacts on the James River and the environmentally sensitive areas along its banks. However, making any changes that reduce the ability of the City to attract a variety of industries could have negative impacts on the City's entire economic base. Industries have historically located in the study area for several reasons--appropriate zoning, access to the river, and, in many cases, a need to be in close proximity to other commercial and industrial activities in the south part of Richmond. These symbiotic relationships are necessary to any economic base. Furthermore, the elimination of the industrial and heavy commercial activities and the employment opportunities they offer may have a negative impact on nearby residential uses.

Alternative 3

The third alternative is to work with the private sector in the study area to develop a strategy of private action and limited City intervention that will lead to the protection of sensitive environmental areas and water quality, while respecting the industrial nature of the study area. At the same time, this strategy should acknowledge the potential for change in land uses over time. There are uses in the study area, such as the quarries, which will disappear over time. The strategy must acknowledge this fact and allow for the redevelopment of certain parcels into uses that may or may not be industrial or heavy commercial. Any changes must, however, be to uses that are compatible or do not threaten this important portion of the City economic base.

Recommendations

Alternative 3 appears to offer the greatest benefit to the activities in the study area, residents of nearby neighborhoods and the city as a whole. To implement this strategy, the City must have a clear, understandable and salable plan for dealing with the study area, now and in the future.

The adopted Environmental Element proposes the designation of an Environmental Protection Area as an overlay to the Master Plan. This would encompass the designated Chesapeake Bay Preservation Areas and other appropriate natural areas. This action could:

1. act to reduce the potential for incompatible and inappropriate development in these areas,
2. reduce the possibility of the loss of significant environmentally sensitive lands in the areas, thereby increasing the potential for water quality protection along the river, and
3. increase the chances of protecting wildlife habitat and valuable visual open space.

The Environmental Element also proposes the creation of an Environmental Protection District overlay to the Zoning Ordinance. This would require a review of all development plans

within designated Environmental Protection Areas. To accomplish these objectives, the City must continue to work with property owners in the study area to explain the importance of protecting environmentally sensitive lands. This work should focus on such issues as reducing storm water run-off and striving to reduce the potential for environmental accidents as well as increasing the City and the private sector's ability to deal with such incidents.

The City may want to go a step further if it is to address the issue of enhanced access. The City should investigate the use of easements as a means of environmental protection. Using easements would allow property owners to retain ownership, but could reduce or perhaps eliminate the potential uses for which the property could be used. Easements could be strictly open space, easements, precluding development, or be developed in a manner that allows some types of use while retaining and protecting the natural environment. Tax incentives could be offered to property owners who voluntarily give up some or all of the development rights on their property. Through easements and other non-fee transfer arrangements, a system of trails could be developed that minimized that amount of land taken off of the tax rolls and the City's maintenance exposure.

This concept could lead to a trail system that begins at the flood wall and runs as far south as the Port. The trail system could be constructed to tie into other recreational opportunities along the way. One trail could lead to Ancarrow's Landing, where bank fishing and perhaps other recreational opportunities could be offered. Another opportunity is immediately north of the Port where an observation deck could be built to allow observation of Port activities.

Opening this land to pedestrian and bicycle access would have several benefits. The land adjacent to the river is not now visible to the public from within the City. Allowing access would increase the awareness of the public and the City as to what is happening in the area between the river and these industries. Second, this would give many city residents access to the river along this portion of the James, especially residents who live south of the river.

Reuse of the quarry sites could also be examined as part of this strategy. At present, RRPDC staff is not aware of any specific plans for the reuse of these sites. Based upon other such sites, one might speculate that they will be left as very deep lakes. (The projected depth of one quarry is 450 feet.) A variety of recreational uses could be considered for these sites.

The future of this area could be a continuation of what is there now. Or a new development pattern could be encouraged. A development pattern that continues industrial and heavy commercial uses, but also integrates a variety of compatible land uses and recreational features that benefit a larger segment of the City's population. To reach this potential, however, work must begin now to get buy-in on a new development concept from existing land owners. And to do this, the concept must demonstrate clearly saleable benefits to these existing land owners to be implemented. Once this is done, exciting things not now imaginable may begin to happen.