

## Appendix 3J. Impact Assessment: Planning Methods and Policy Tools

The following discussion has been included as an appendix to the Land Use Technical Report due, and is also linked to Action 1.5 of the Land Use Goals, Strategies and Actions. The first section discusses demographic methods for assessing and projecting change in a community over time, and policy tools that can be used to help address facility and service needs. The second section outlines the current status of impact assessment planning and policy options for public facilities, water and sewer, transportation, and natural resources. For both sections, the methods and policy options discussed are not necessarily all-inclusive, and there may be other options that could be considered.

### Section 1

#### A. Demographic Methods

There are several methods that can be used to project future growth in a community. The following points provide a brief synopsis of several of the methods that have been used in James City County.

- i. Population projections. This method is described in the Demographics Technical Report, Section 6b. Projecting trend lines based on past growth trends, as Planning staff has done, provides a way to estimate population numbers over time, but does not provide information in relation to (a) commercial growth impacts or (b) a sense of what the “truth on the ground” is in terms of the actual capacity of an area to accommodate continued growth or (c) the spatial location of growth or impact on particular areas or road network links.
- ii. Cohort analysis. This method involves analysis of the different age groups in a population and tracks them over time. This method is used by the WJCC-Schools to project school enrollment numbers, but could be used for the overall population as well.
- iii. Development tracking. This method looks at the amount of existing development and the amount that has been approved and is “in-the-pipeline”. This analysis can yield information on projected population based on the numbers of units, and therefore the total amount of potential demand for services. However, this information, by itself, does not provide a time factor (i.e. when the demand might be likely to reach the level when a new facility or service will be needed) since, at least currently, approved development is not locked into a certain pace or set of years in which it must develop. Development tracking can result in information which can be sorted by geographic area.
- iv. Constrained Model 1. In 2002, the Planning Division worked with a consultant to prepare a DPA of the portion of the County inside the Primary Service Area. The DPA was an involved process that essentially calculated existing development, lots that were “in-the-pipeline” and then looked specifically at each undeveloped parcel designated for residential development by the Comprehensive Plan and estimated the unit yield based on the Comprehensive Plan designation and the specific circumstances of the parcel in question. In addition, a similar, but more broadstroke, methodology was followed in 2006 to give a picture of development potential outside the Primary Service Area; together, these figures provide an estimate for the County as a whole. This method is constrained in the sense that it takes into account the actual capacity of the PSA to accommodate continued growth, and provides a sense of units that could be accommodated at a “built-out” condition. What this method does not do, by itself, is provide an idea of the timing of the projected growth. Timing context can be provided by applying a method such as (a), above.
- v. Constrained Model 2. Another variation on the model in (d) is the method currently being used by URS in developing the traffic model. This method differs chiefly in that instead of looking at each parcel individually, it aggregates undeveloped parcels when estimating development potential, and applies a generalized density or intensity, plus a generalized discount factor to take into account environmental constraints and infrastructure needs. The other key difference is that model also uses state demographic data on employment to look at existing employment and uses the Comprehensive Plan designations to estimate future employment as well. Finally, this model looks at the County as a whole, with areas divided into Transportation Analysis Zones. Information on the commercial side of the equation can be important for transportation and water demand planning.
- vi. Functional population. One important item to note is that public facilities, transportation, water and other needs are not only affected by the development that is in the County, but by people that work here but live elsewhere, and by visitors to the community. Planning literature provides guidance on ways to take some of these factors into account.

## B. Policy Tools

- i. Adequate Public Facilities policies or ordinances/Level of Service Standards. These policy tools are discussed in the Public Facilities Section 8.
- ii. Cash proffer guidelines. Guidelines can be developed by policy that indicate the recommended per unit contribution toward the development of facilities necessitated in whole or in part by a proposed development. These policies can only be applied in the case of development approved via the legislative (rezoning or SUP) process.
- iii. Impact fees. Impact fees are fees generally collected at the time a building permit is issued that represent the proportion of facility costs generated by that unit. Impact fees can be collected from all development, even those units which are developed by-right. Under the *Code of Virginia*, James City County has the ability to set up a system to collect transportation impact fees, but currently not the ability to collect other types of impact fees.
- iv. Planning literature can provide guidance on developing “square feet per person” multipliers for different types of public facilities. This information can be used on itself for tracking purposes, to given an idea of how close the County is to needing an additional facility of a certain type. This information could also theoretically be used as an input in the development of items a through c, above.

## **Section 2**

### **A. Public Facilities**

#### *Schools*

##### **Total needs planning**

Williamsburg-James City County school system works with a consultant and with Development Management to develop population, cohort (a group of children of a given age) and, ultimately, school enrollment projections for ten years into the future. These projections help the system to plan for new facility needs. There is currently no known estimate of or planning for school facility needs at a “build-out” condition, and no existing service standards per population.

Various planning literature suggests ways that longer-term or “build-out” needs could be projected. One method would involve arriving at the number of school age children in proportion to total population, and deciding on an appropriate amount of space needed per pupil. Assuming that the current school-age population proportion remains constant for any given total future projected population number, and that the schools sizes in the future would match the most recently designed schools, these numbers could be used to project future school needs. Other methods may use other sets of assumptions or tools to arrive at projections.

Based on the methodology and assumptions described above, at a population level of 120,000 (staff projected build-out based on the 2003 Comprehensive Plan Land Use Map), in addition to schools already existing or under construction, the County would need six more schools, 3 elementary, 1 middle, and 2 high schools. However, input was also received from staff with many years of experience that the same gain in population would likely result in the need for 5 new elementary schools, 2-3 new middle schools (depending on the future use of James Blair), and 2 new high schools. Neither of these methodologies or projections has been endorsed by the School System. Note that these numbers are not double the current numbers because with the schools already built or in the pipeline, there is capacity built into the system to cover population growth for a certain number of years (the number of years varies for elementary, middle and high). In addition, it is extremely important to note that the service area of the school and the programmatic needs of the school division are other critically important factor. As outlined in the Public Facilities section, there are certain travel distances which will optimally be met for each school. This could influence not only the location of schools, but also the total number as well. Finally, the numbers listed above based on the methodology described would clearly be estimates with many caveats and a great deal of uncertainty, including, among other things, that: (a) the calculations would also need to take into account the City of Williamsburg since it is a joint school system and (b) the type of development approved in the future will influence the population demographics, so the type of projected residential growth would be as or more important than the quantity and this would not be reflected in the calculations.

##### **Existing APF?**

There is an existing policy, known as the Adequate Public Schools Facilities Policy (APSFP) which was developed in order to better enable officials to regulate the timing of development in relation to the capacity of the existing and planned school facilities. The policy is designed to look at three factors: the effective capacity of the elementary, middle and high schools in the proposed development’s districts; the existing enrollment as of the most recent September’s official enrollment number; and the projected number of school children to be generated by the proposed development, split up by school level. The policy then compares the existing plus projected enrollment numbers with the schools’ effective capacity.

##### **Existing cash proffer policy?**

There is an existing cash proffer policy, with per residential unit (categorized by type) guideline amounts adjusted approximately every two years by the Board of Supervisors. The policy was developed in part to standardize the cash proffer amounts offered by developers to mitigate the impacts of expected school children generated by a given residential development.

##### **How individual development proposals fit into the big picture**

Currently, proposed residential developments are evaluated against both the APSFP and the cash proffer policy. In addition, the School Division is a part of the

review process for proposed new developments.

**Future policy options**

Schools funding is the single largest portion of the County’s budget, and having facilities available for students when they are needed is very important. Board members and others have raised concerns about the existing APSFP from the perspective that it only includes existing school enrollment and projected school enrollment from the proposed development, but not projected enrollment associated with other “in the pipeline” development. Since there are currently no formal “total need” projections which take into account general growth out beyond a ten-year time frame, this is a valid concern. Given the greater degree of uncertainty associated with a “work backward” build-out methodology, a tracking system that builds on the existing system, but also keeps track of “in-the-pipeline” figures (or finds a way to estimate them) might provide additional relevant information.

1. No change from existing situation; continue to use both policies as they are.
2. Investigate development of a tracking system to complement the existing APSFP that would enable projected school children of a proposed development to be put in the context of current amounts and projected future need amounts. Note that while this will help indicate total numbers better than the existing system, it does not provide a specific timeframe, as development pacing is variable and not under the control of the County.
3. Clarify how the two policies work together for future reference (i.e. if a development does not meet the APSFP guidelines, but cash proffers are provided, what is the suggested protocol).

*Fire/EMS*

**Total needs planning**

Fire Department facility needs planning is primarily in terms of performance standards (response times) in relation to fixed station locations more so than direct population numbers, although population growth is certainly a factor as well. As detailed in the Public Facilities Technical Report, the guideline for projected new facilities is a “response time of 6 minutes or less within service areas that generate 365 or more emergency incidents per year.” The need for new facilities may not be directly proportional to population growth. Instead, population growth may result in changes in staffing levels at existing facilities (and possible associated expansions associated with the changes in staff numbers).

There is planning literature which provides guidance on a way to develop a “population to square feet of facility needs” multiplier which is based on a functional population (takes into account people that work here, etc.), existing local facilities (not state or local standards), plus an assessment of a County’s desires (is the existing standard of service adequate). The County has not yet developed this calculation, or adopted a multiplier figure. As stated above, the response times standard is extremely important, and could influence the outcome of not only the location of stations, but the actual number needed as well.

Planning on the part of the Fire Department in relation to response times and other factors has projected the need for three additional fire stations as a likely scenario at County “build-out” under the current land use scenario. Most or all of these stations would likely need to be located at the upper end of the County.

**Existing APF?**

There is currently no APF policy.

**Existing cash proffer policy?**

There is current no cash proffer policy; while applicants have provided funds at their discretion, there is no set formula.

**How individual development proposals fit into the big picture**

Staff reports have typically noted which stations would serve the proposed development.

**Future policy options**

1. Develop an APF policy for fire service.
2. Develop a cash proffer policy, if determined to be feasible. A clear indication of a guideline amount would provide public benefit and improve consistency and

predictability.

3. Development of a tracking system that would enable the Fire/EMS need square footage figure (and potentially other factors) of a proposed development to be put in the context of current amounts and projected future need amounts.

***General Government (including Police, community centers, etc.)***

**Total needs planning**

General government and staff needs planning has not necessarily been linked directly to population growth.

There is literature that provides a way to develop a “population to square feet of facility needs” multiplier which is based on a functional population (takes into account people that work here, etc) existing local facilities (not state or local standards), plus an assessment of a County’s desires (based on a determination of whether the existing standard of service is adequate). At this time, the County has not yet developed this calculation, or adopted a multiplier figure.

A square footage figure developed from this type of calculation might not translate into a certain number of buildings since office space is leased, in some instances. Finally, please note that for certain functions, such as Police, there are other factors such as response time guidelines.

**Existing APF?**

There is currently no APF policy.

**Existing cash proffer policy?**

There is currently no cash proffer policy; while applicants have sometimes provided funds under the “other CIP needs” heading, there is no guidance on the appropriate amount.

**How individual development proposals fit into the big picture**

Individual development proposals have not typically been evaluated in relation to adequacy of general government functions.

**Future policy options**

1. Develop an APF policy.
2. Develop a cash proffer policy, if feasible. A clear indication of a guideline amount would provide public benefit and improve consistency and predictability.
3. Development of a tracking system that would enable the general government need square footage figure (and potentially other factors) of a proposed development to be put in the context of current amounts and projected future need amounts.

***Libraries***

**Total needs planning**

Library service guidelines have been developed at the state level which relate population to a certain quantity of library square footage (as well as other factors, such as number of books). In addition, the standards add a spatial element by including a recommended drive-time distance from the population being served. These State level service standards have been applied to James City County and are listed in the Public Facilities Technical Report. Using this information, it would likely be possible to project square footage of libraries needed at a given population level. This calculation could be translated into actual number of libraries if a certain square footage per structure figure were assumed. However, this calculation is complicated by the fact that the library system is a joint system with the City of Williamsburg, and by the fact that there is also an agreement with York County that allows York residents to use the library (York County may soon be opening libraries which may alleviate impacts to the Williamsburg Regional Library). Planning for a third library is currently underway.

**Existing APF?**

There is currently no APF policy that includes libraries.
<b>Existing cash proffer policy?</b>
There is currently no cash proffer policy or guidance amount, although developers of residential projects have sometimes provided cash proffers to fund “other CIP needs” at their discretion.
<b>How individual development proposals fit into the big picture</b>
Individual residential legislative proposals have not typically been evaluated against the adequacy of existing library facilities in the County, nor have they been evaluated against proffer guidelines.
<b>Future policy options</b>
<ol style="list-style-type: none"> <li>1. Develop a cash proffer policy guideline amount if, after investigation, this appeared to be feasible. A clear indication of a guideline amount would provide public benefit and improve consistency and predictability.</li> <li>2. Develop an APF policy for libraries.</li> <li>3. Development of a tracking system that would enable the “library need” square footage figure (and potentially other factors) of a proposed development to be put in the context of current amounts and projected future need amounts.</li> </ol>

*Parks and Recreation, Recreation Centers*

<b>Total needs planning</b>
Parks and Recreation just completed a needs assessment as part of their master plan process. Standards have been developed at the national level which relate population to the need for certain quantities of various facilities (trails, park acreage, swimming pools, etc.), and the plan has built on these to develop specific service standards for James City County. The service standards were used to evaluate the adequacy of facilities in relation to existing population, but also the needs analysis projected future demand based on the projected 2017 population. The assessment added a spatial element by using equity mapping. Additional details are included in the Parks and Recreation Technical Report and in the Parks and Recreation Master Plan. Total needs were not projected for a theoretical build-out scenario; however, since the standards have been developed based on population figures, it appears that this would be possible using “build-out” population projections. Please note, however, that a lot of Parks and Recreation projection is location based, so making sure facilities are evenly distributed is as important a factor as the total projected needs.
<b>Existing APF?</b>
Currently no APF policy exists.
<b>Existing cash proffer policy?</b>
There are proffer guidelines as a part of the Parks and Recreation Master Plan. They provide guidance on facilities to be built within the new development/neighborhood, or cash provided in lieu to be used by the County to build facilities.
<b>How individual development proposals fit into the big picture</b>
Individual residential legislative proposals have not typically been evaluated against the adequacy of existing recreation facilities in the surrounding area or the County as a whole. They have, however, been evaluated against the proffer guidelines. Developments have typically provided on-site amenities for most of the categories (open space, trails, playgrounds) which are basically for use by the HOA members only, and cash in lieu of items such as baseball fields or basketball courts. These cash proffer amounts have likely provided only a small percentage of the funds needed to acquire and develop larger park areas such as Warhill or Freedom Park, which have been funded in part by bond money instead. Please note that amenities provided by private developers help alleviate demand on County facilities, especially in terms of trails and water access.
<b>Future policy options</b>
<ol style="list-style-type: none"> <li>1. Continue using the proffer guidelines from the Parks and Recreation Master Plan.</li> </ol>

2. Use #1, but also develop a cash proffer guideline that takes into account the financing of larger park areas (in the past, larger parks have been funded in part with bond money).
3. Develop an APF policy for recreation facilities.
4. Development of a tracking system that would enable the parks and recreation standard's projected need figures of a proposed development to be put in the context of current park acreage amounts and trail distances and projected future need amounts.

### **B. Water Demand**

Water is a basic human need that must be met for communities to exist, for people to live and work, and for most commercial endeavors to thrive. Meeting water demand is a complex and sometimes controversial issue in James City County, as it is in many other places across Virginia, the United States, and the world. Water demands are likely to increase in the future, and meeting those needs in a sustainable way is a major challenge.

#### **Total needs planning**

JCSA expends considerable time and effort on water supply planning. The Authority strives to plan to meet water needs based on a build-out of the PSA as envisioned by the Comprehensive Plan land use map; thus planning is accomplished in a comprehensive way that takes into account the projected cumulative water demand of parcels throughout the PSA.

While residential unit numbers are an important factor in the water demand equation, demand is also generated by commercial and industrial users, and by those who visit or work in the County but do not live here.

Another important factor is that much of the County's water supply planning is driven by water demand for irrigation of lawns and gardens and other outdoor water uses. Currently, total system demand figures that may be almost 4 million gallons a day in March increase to 8 and 9 million gallons a day in the summertime, primarily due to irrigation and other outdoor water uses. This degree of fluctuation is much greater than what is seen in the adjacent Newport News system. The JCSA has taken pro-active steps to try to abate the increases, including odd-even day outdoor water use restrictions, an active education program, and a fee structure that increases with increased water use. In addition, JCSA has worked with Planning to place conditions on, or request proffers for, new development that include water conservation agreements and restrictions on use of potable water for outdoor water uses. Nevertheless, substantial funds are being spent by the County to secure water that will be used for meeting irrigation and other outdoor water demand peaks rather than for domestic and commercial consumption. The JCSA has evaluated the cost of water reuse for outdoor water uses and determined that for the time being it is more expensive than the costs of providing new potable water. As technology evolves and available potable water resources become even more difficult to obtain water reuse will be used more often to meet irrigation demands. In addition; water reuse is a possible source of process water for commercial/industrial applications. Several southeastern states, and in particular North Carolina, have begun to require grey water or water re-use systems for uses other than human consumption in both residential and commercial/industrial contexts.

Demand has been met using ground water withdrawal from the Chickahominy-Piney Point aquifer, the ground water treatment plant (which treats water from the Lower and Middle Potomac aquifers), and most recently, purchase of water from Newport News Waterworks. In the long term, the County along with regional partners continue to work on plans for the King William Reservoir. JCSA is currently working on application materials for renewal of the DEQ groundwater withdrawal permit, which would run from 2012-2022, and is participating in regional water supply planning for the Hampton Roads area. Once the outcome of the DEQ permit process is known, it is likely that the major factors relating to the costs and available quantity of the water supply through the year 2022 will be

known.

JCSA has in the past used historical water demand and building permit trend data as well as population growth projections produced by the Planning Division to project water demand needs over time. This information gives an indication of the total amount needed at a given year in the future.

#### **Existing APF?**

Currently there is no APF policy, however, timing of development in the past has been linked to completion of certain facilities such as the desalinization plant.

#### **Existing cash proffer policy?**

Proffer guidelines exist for per-unit or per gallon cash contributions to support financing the development of new water sources, and these figures are updated annually by JCSA. In addition, developers are held responsible for building the infrastructure needed for a development and then turning it over to JCSA. Finally, connection fees and water use fees are charged for water use to cover maintenance and operating expenses.

#### **How individual developments fit into the big picture**

As noted above, planning is done at the PSA level. If the DEQ permit is approved at the expected level, this source, plus water under contract with Newport News is projected to be sufficient to serve James City County through 2050, but would not provide sufficient water to serve the County at projected “build-out” level. The water demands of individual residential and commercial development projects should be accounted for in JCSA’s water needs planning as long as they stay within the intensities and densities suggested by the Comprehensive Plan, and perhaps more critically, as long as demand amounts do not grow at a pace or rate above what has been projected.

#### **Future policy options**

While the infrastructure needed to support it is location specific, water demand itself is a County-wide sum total calculation. To a greater degree than facilities such as schools or fire stations, the demand can be met in a number of different ways, and like the use of Newport News Waterworks water or a future King William Reservoir supply, may not be physically located in the County. Developing an APF for water would likely be quite difficult as water demands vary by use, by day, and by time of year and because water is a resource that has regional implications. New state laws requiring regional water supply planning are a step in the right direction. The following are several policy options:

1. Development of a better development- tracking system that would help the water demand figures of proposed development to be put in the context of current water demand along with the projected water demand amounts.
2. Continuation and enhancement of existing water conservation programs, policies and procedures to clearly prioritize potable water for residents and necessary business uses, and encourage the use of water conservation techniques and/or grey or water re-use systems for other uses in both residential and commercial contexts.
3. Continue cash proffer guidance amounts.
4. Through careful deliberation, develop a policy that sets a “ceiling” on the amount of water that the County will commit to financing and develop growth management policies, including water conservation strategies, in coordination with this amount. This option would likely mean that a policy equivalent to an APF would need to be developed.

There are constraints on the amount of potable water that is available, since aquifers should only be drawn down at certain rates, and surface water systems also have limits on draw down rates and capacity, and are subject to variations in rainfall and temperature patterns, as has been seen in Virginia and elsewhere in the last few years. Technologies such as desalinization can help meet demand, but also represent significant costs. JCSA makes efforts to meet the demand

represented by the Comprehensive Plan map and policies - policy decisions about what it needs to plan for are ultimately decided during the Comprehensive Plan update process and decisions of the Board.

**C. Sewer Treatment Capacity**

Sewer treatment is handled by the Hampton Roads Sanitation District. At this time, the Williamsburg Treatment Plant has capacity in excess of existing flows (flows from other jurisdictions are also treated at this plant). However, in the future, Environmental Protection Agency (EPA) limits on certain water pollutants discharged in the Plant’s effluent may constrain treatment capacity even before the Plant’s design capacity is reached. This situation should be closely monitored but at this time no clear course of action for the County is indicated.

**D. Transportation Infrastructure**

During the 2006 and 2007 General Assembly sessions, a number of bills were passed specifying procedures for transportation planning as part of a locality’s comprehensive plan. New Virginia Code language specifies that comprehensive plans should include a plan for road and transportation improvements, including the costs of such improvements, and also specifies that the Virginia Department of Transportation (VDOT) shall review Comprehensive Plan updates and amendments. For the 2009 Comprehensive Plan, staff has engaged URS as a consultant to help the County meet these new expectations.

**Total needs planning**

The URS traffic model is built upon a data framework consisting of projected households, population, and retail and non-retail employment. This data is projected for a “build-out” scenario using existing development plus estimated density and intensities for vacant land that are based upon zoning and comprehensive plan designations (in different scenarios). More detail on the methodology is included in the Transportation technical report.

Among other information, the model returns levels of service results for County roads. For those roads where the level of service is a D or below, the model indicates the potential need for widening and a cost figure is calculated. A second stage to the modeling will put improvements needed in the context of the build-out timeframe. The County will own the data from this modeling, but not the software, so updates can only be done on a periodic basis.

This model is cumulative and comprehensive in the sense that it includes the entire County, but does have some limitations on the specificity of information due to its scale. The Comprehensive Plan Land Use Map that is adopted during this update will correspond to a known traffic model, a set of projected impacts and costs, and a projected timeframe over which improvements would be likely to happen. As long as any individual development project corresponds to the density and intensity assumptions used in the model (which are drawn from the land use designation recommendations), the overall, cumulative impact will be projected at a macro level. It is important that the adopted Land Use Map and associated policies reflect the community’s accepted standards and their associated cost implications.

Please note that past Comprehensive Plans have also included modeling efforts based on the forecasts developed by the Metropolitan Planning Organization (MPO), so for example, the 2003 Comprehensive Plan included MPO transportation projections for the year 2026. The MPO updates projections every four years; currently the 2034 projections are in progress (please see the Transportation technical report for further details). The projections in the 2003 Comprehensive Plan included information on projected volumes, projected number of lanes needed, and recommended lanes for selected roads in the County.

The work that URS is doing adds the following elements to this picture:

- a) The underlying data framework (demographic and employment info) is based on actual James City County zoning and Comprehensive Plan classifications. The MPO system uses an overall state level projection of demographics and employment for the region, then disaggregates the total by assuming certain

proportions for each locality.

- b) The URS model includes more roads and road segments which provides additional information.
- c) The URS model provides the ability to investigate the implications of different scenarios, such as the land use applications.
- d) URS is providing cost estimates for the projected improvement needs.

The County has conducted traffic counts every two years for certain roadways which provide updates on the existing volumes and give a picture of how close the roads are to their capacity (in their current configurations).

#### **Existing APF?**

There is no existing transportation APF policy. In the past, there have been instances where developers have proffered to pace development in relation to the construction of certain new roads, and have also either built new roads themselves or have dedicated land to allow for construction of roads necessary to support the proposed development. Also, it has been typical for developers to proffer to construct or modify turn lanes or tapers, provide funds for traffic signal installation or signal timing modification, modify entrances and other like improvements to the point where an acceptable level of service is demonstrated to be maintained for the roadway network. The 2003 Comprehensive Plan transportation section provided guidance of the ability of certain roads to carry additional traffic with their current configurations, labeling some roads as being in the “watch” category.

#### **Existing cash proffer policy?**

There is no existing transportation cash proffer policy. In the past, there have been instances where developers have proffered cash contributions to go toward paying for certain improvements (for example, intersection or corridor improvements, or for traffic signal installation), which are generally proportionate to a development’s share of the trips generating the need for the improvement.

#### **How individual development proposals fit into the big picture**

Currently development proposals submit traffic impact studies which project the project’s impact on the immediately surrounding roadway network through the estimated project build-out timeframe. Board members and others have raised concerns in the past about traffic studies for development proposals not taking into account planned development in a given area or corridor, but relying on generalized background trip growth rates.

In addition, individual projects have been evaluated against the information on 2026 volume projects and the guidance on available capacity described above.

As noted above, the URS traffic model is large-scale, and do not study the need for individual turn lanes, traffic signals, or other similar items, which emphasizes the continuing need for, and value of, project specific traffic impact studies. Furthermore, while macro level impacts will now be projected, there is no policy to either pace development or require developers to pay costs associated with the improvements identified in the model (see future policy options discussion below).

#### **Future policy options**

Note that alone among the categories in this document, the Virginia Code was recently amended to allow certain localities, including James City County, to assess impact fees for transportation improvements. Additional discussion of road impact fee legislation is included in the Renaissance Planning Group memo, and in the Major New Legislation section of this technical report. Possible new policy directions include:

1. Develop a Level Of Service (LOS) standards policy
2. Develop a traffic impact fee system in order to help fund big picture improvements which will be needed
3. Develop guidelines for evaluating new development proposals, including taking into account “in the pipeline” development impacts on road segments. (This could provide a benchmarking function of how close a road might be to needing improvement in terms of projected volumes, but would not necessarily result in a specific timeframe since the pace of development may vary.)
4. Develop cash proffer policy guidelines for “big picture” transportation system improvements.

### **E. Natural Resources/Environment**

The categories above all deal with service needs generated by development, which already are, or likely could be, quantified. Clean air, clean water, watersheds that are able to handle most storm events without flooding, and habitat that is able to support animal, bird and plant populations are all public benefits and affect residents' and workers' quality of life, as well as the community's property values and desirability as a place to live. However, they are also factors that are very difficult to quantify.

One measure that has been discussed in the Environmental Technical Report is the amount of impervious cover in a watershed correlating to projected water quality conditions (sensitive, impacted, non-supporting). However, to illustrate how difficult it is to quantify these factors, note that knowing how much development has and is occurring in a particular watershed is not necessarily enough information to tell how a watershed is affected. Different developments with the same number of units can result in different amounts of impervious cover, and depending on the other measures that are taken on the site, can result in different impacts on water quality. Given this, staff recommends that the tools that the County already has in place continue (stormwater regulation, watershed planning, special stormwater criteria, erosion and sediment control, etc.) and continue to encourage innovative practices such as Low Impact Design, green roof technologies, and LEED certified sites, coupled with actual water quality monitoring, and with the stormwater master planning efforts already included in the Environmental Section GSAs.

