# SUGGESTED REVISIONS TO THE ANNUAL HIGHWAY SAFETY WORK PROGRAM IN VIRGINIA

by

Wayne S. Ferguson

Research Analyst

and

Clinton H. Simpson, Jr.

Research Analyst

(The opinions, findings, and conclusions expressed in this report are those of the authors and not necessarily those of the sponsoring agencies.)

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#### ABSTRACT

This paper describes some suggested revisions in the format of and method and procedures for compiling the Annual Highway Safety Work Program (AHSWP) required of the states by the National Highway Traffic Safety Administration (NHTSA). Prior to fiscal year 1972, the states were required to send little information to the NHTSA (then the National Highway Safety Bureau) regarding activities and expenditures for future highway safety projects. Following the introduction of the Annual Work Program, however, the states were required to submit multi-year and annual plans and projections in a format similar to that of the Planning, Programming, Budgeting Systems (PPBS) models adopted during the 1960's by many federal agencies. It is suggested that problems with the AHSWP, both those caused by the system itself and those resulting from a lack of confidence in it by state program administrators, have impeded effective program management in the states. Revisions to the AHSWP, which are based upon some of the data elements and information requirements of the Program Information Reporting System, the Design Manual for State Traffic Records Systems, and certain aspects of the management by objectives concepts now embraced by the NHTSA, are felt to be an asset to state highway safety program management. Examples of the new approach are given.

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#### INTRODUCTION

On August 29, 1969, the National Highway Safety Bureau issued NHSB Order 7.105 announcing the "Annual Highway Safety Work Program" as the basic working document for administration of state highway safety programs. The order marked a significant change in the relationship between the NHSB and the governor's highway safety representatives of the various states. The AHSWP was to be a "bloc" grant, or consolidated grant, approach to highway safety management; would redirect state attention to problem areas in highway safety rather than strict adherence to the program standards; and would integrate planning, programming, and budgeting into a single, coherent document. Review and approval of each and every state highway safety project to be funded with federal funds would become things of the past for the NHSB regional and Washington staffs.

State efforts in highway safety program management following passage of the Highway Safety Act of 1966 had been far different from the new requirements of the AHSWP. In Virginia three documents had been submitted to the NHSB reflecting the state's efforts in complying with federal mandates. The first, <u>Base Year Highway Safety Expenditures and Cost Estimates for Implementing the Highway Safety Act of 1966 in Virginia</u>, was submitted in November 1967. The study was, in fact, a combination of the base year estimates which would provide a bench mark against which

future program efforts could be measured and a needs study which indentified un-met requirements of the state program.

Following the base year study, the state was required to transmit a state program submission or, as it was later known, a comprehensive plan. The program submission titled The Establishment of a Statewide Highway Safety Program in Virginia was completed and sent to Washington in October 1968. This report, in addition to presenting data updating the previous material, denoted a fundamental difference from the earlier report; it reflected a change in emphasis from the individual implementation of the highway safety program standards to one of pianning, coordinating, and managing a statewide program. A year later, in September 1969, a report was completed which simply updated the 1968 report. It was entitled The Establishment of a Statewide Highway Safety Program in Virginia — Supplementary Data for 1969-70.

In August 1969, the guidelines for the AHSWP supplanted these program submissions. This program had three essential objectives insofar as program administrators in Virginia were concerned. Since it would introduce statewide planning for the first time, it was intended to improve highway safety planning. Further, it was designed to link planning and budgeting so that programs could be linked to the funds needed for project implementation. Finally, the AHSWP was supposed to link planning and budgeting to program evaluation so that the results and effectiveness of programs and projects could be reviewed. This review process could then lead to informed decision making regarding program priorities and the funding of programs that work to reduce deaths, injuries, and property damage.

The AHSWP was supposed to eliminate the rigid observance of program standards and was designed to enable state program administrators to channel their efforts into problem areas, areas identified not in relation to the standards but in relation to program elements and sub-elements. (According to Volume 103, the Highway Safety Program Manual of NHSTA dealing with the AHSWP; Program Elements do not necessarily correspond with the Program Standards. Volume 103 says:

'Program Element — An element of safety structure generically describes the type of program and generally describes the character of the objective. Elements contain activities defined by:

- One phase of the highway safety system (human-entry).
- One State level agency primarily responsible for achieving the objectives (e.g., Department of Education).
- Activities closely related to one another.

<u>Program Sub-element</u> — A sub-element is the basic highway safety program planning unit, addressed to one object subgroup with special needs and problems (e.g., drivers under the discernible portion of the accident threat.) Sub-elements are those activities which identify WHAT is to be done. A sub-element may involve more than one area.")

Unfortunately, this reorientation to problem areas has never really occurred in Virginia and there are several reasons for it.

#### PROBLEMS WITH THE AHSWP

It would be fair to state that the concepts underlying the annual work program have never been fully understood or appreciated by state highway safety program administrators.

It could be argued that, in part, this is the fault of the administrators themselves; that they have never sought to completely inform themselves of the program and the use of the new system. But this explanation would address only part of the problem.

By far the greatest fault lies in the AHSWP system itself. It is arcane and cryptic; loaded with jargon words like sub-element, output, coverage, proxy measures, operations support, and interface. While these terms, and the portions of the AHSWP documents that they reference, may not be difficult for highly trained systems analysts, or operations research people, they are exceedingly complex for the people in positions of authority within the state highway safety program structure. For the most part, these state program administrators are people who are quite knowledgeable and competent in their jobs, but are not conversant in the vernacular of systems analysis and program evaluation.

In Virginia, persons responsible for the preparation of the first annual work program recognized this problem and sought to minimize it by publishing an Annual Work Program Manual designed to explain the process in language somewhat more understandable than that used in Highway Safety Program Manual (Volume 103) itself. The effort did not succeed. The former, unfortunately, could not eliminate or significantly alter the reporting requirements of the AHSWP, regardless of what one called them.

A further difficulty with the AHSWP was the general, nonspecific nature of the forms used in compiling the plan. The sub-element plan (SEP) form was a  $216 \text{mm} \times 330 \text{mm}$  ( $8\frac{1}{2}$  in. x 13 in.) sheet almost entirely blank with space allotted for the insertion of plans for the same arcane items previously referenced (see Figure 1).

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Figure 1. Sub-element plan reporting form.

The state program planners were expected to "identify the problem areas" within their sphere of influence by determining measures of "effectiveness" (or lack of same) and then formatting plans for the solution to the problems. Unfortunately, neither the problem identification process nor the planning for future activities was much facilitated by the work program. The poor format also contributed to a lack of uniformity in reporting standards. Each state program administrator, and each local government submitting an AHSWP, used their own method and style for program submission. Some would submit relatively complete SEP's (absent, of course, effectiveness measures) with detailed breakdowns of tasks and milestones, and complete descriptions of their highway safety programs. Most however, were incomplete in one way or another.

Finally, the annual work program process was already impeded by a lack of usable program data to assist planners in determining both where they were and where they wished to go with the state highway safety programs. Generally speaking, the problems of vague terminology and poor format led to the problem of inadequate data, for even though the AHSWP attempted to incorporate measures of evaluation into its requirements, the confusing manner of its inclusion made the system unworkable in practice. As a result, some planners would develop the AHSWP submission without any clear indication that planned activities were related to the solution of a highway safety problem.

The above problems were brought to the attention of the governor's representative for highway safety through numerous complaints about the AHSWP. It was called 'bureaucratic garbage' by some program managers and was almost uniformly opposed as a planning and evaluation tool. Finally, in response to these criticisms the governor's representative ordered that the sub-element plan form be replaced,

at least for local governments, with a simplified questionnaire. This form satisfied most of the local program managers but led to problems for the governor's representative's staff since the data collected from the questionnaire had to be translated into the form and format of the sub-element plans. Further, some localities were sampled in-depth by the planners so that detailed program data of the type required by the AHSWP could be gathered. Such in-depth data were collected for about ten localities in the state and then extrapolated to statewide figures.

There are, of course, two pervasive problems with the in-depth sampling supplemented by the questionnaires. The first is that for the most part a relatively low standard of performance is imposed on the local governments. The second is that the sampling imposed a hardship on the staff of the governor's representative by requiring that a substantial amount of time and effort be expended in the collection and preparation of the data for the in-depth plans.

#### PURPOSE

As the result of continuing problems with the AHSWP in Virginia, and in the interest of developing a more workable planning system, the governor's representative agreed that a full review of the objectives, methods, and procedures of the program be conducted.

The purpose of the review would be to develop a new AHSWP format and system with four primary objectives:

- To simplify the process and avoid the confusion generated by the jargon and nonspecific format;
- 2. to link available state program data in such a way as to make them useful for planners and administrators;

- 3. to organize the format and available data in such a way as to make them of maximum value in identifying the state highway safety problems; and
- 4. to improve the highway safety planning process at every level of government in Virginia.

#### RELATED DEVELOPMENTS

While these events regarding the annual work program were unfolding, some other areas of the state's highway safety program were also progressing.

Since 1970 a special traffic records committee, and subcommittee of that group, has been working to improve the state's traffic records system. included a special feasibility study and studies to describe the current system and define the met and un-met data requirements using the NHTSA Design Manual for State Traffic Records Systems. To date, improvements in the system itself have been piecemeal, rather than any sweeping reorganization or redesign. completed studies have pointed out the need to change the unilateral nature of the system whereby localities submit virtually all of the information that goes into the state system yet receive practically nothing in return. Also highlighted has been the fact that a wealth of information which might be of value to state program managers has not been arrayed or formatted in a manner which would make it of value to them in program analysis or planning. Hence, efforts are being made to develop a series of computer programs which will retrieve and format locality specific program data for the local governments and safety program specific data for the state program managers. These data, when combined with other available data, can begin to accomplish the goal of "problem identification" that was originally sought with the AHSWP.

In the summer of 1973, the Commonwealth, for the first time, was asked by the NHTSA to submit forms entitled the Program Information Reporting System (PIRS). The PIRS forms requested data relevant to state highway safety program management corresponding with key areas of the state program. At that time it was largely unknown as to how much of the data were available in a form compatible with the PIRS structure. After some time and effort had been expended on the PIRS project, it was determined that a surprisingly large amount of the data could be obtained. The conclusion was inescapable; a great deal of information relevant to "problem identification" could be generated from existing sources.

Finally, in the presubmission conference (critique of the annual work program in rough draft form) held between state officials and NHTSA Region III officials in March 1975, the question of ''problem identification'' was repeatedly discussed. The Region III staff complained that the FY 76 AHSWP did not adequately identify the problems that the plans were designed to correct or ameliorate. Virginia officials agreed, but noted that the AHSWP was consistent with federal guidelines for the document's content and structure. The group seemed in agreement that the source of the difficulty was perhaps the reporting format of the AHSWP itself.

### THE NEED FOR PROBLEM IDENTIFICATION IN THE AHSWP

The endorsement of "Management by Objectivies" (MBO) by the NHTSA and the emphasis placed on this tool as a means of incorporating problem identification into the annual work program provided an impetus for restructuring the AHSWP process in Virginia.

In the business world, MBO has been a widely accepted management technique since the mid-1960's. The term was coined by Peter Drucker in 1954 in his book

The Practice of Management (1). Later, in 1965, it was developed into a system for

management by George Odiorne in his book <u>Management By Objectives</u> (2). Odiorne saw MBO as a simple and practical application of systems theory. The basic idea behind systems theory, he stressed, was that all the basic components of a machine (or organization) must work in supportive coordinated harmony for successful operations. He viewed MBO as a system that integrates the company's goals of profit and growth with the manager's needs to contribute and develop personally. Odiorne saw MBO as a closed loop system defining both organization and individual goals in a way that assured purposeful action.

According to the American Management Association's publication titled Getting Results Through MBO, the system works as follows. It begins with the determination of company or organizational goals by the board of directors. Then, the president of the firm, or its top operating officer, must determine what he must do in order for these goals to be met. He defines his duties in terms of objectives that he must personally meet within one year, as determined by the company or organizational goals. The president then tells his vice-presidents to prepare their own sets of objectives in support of the president's objectives. The vice-presidents, in turn, follow a similar procedure with each immediate subordinate and the process continues throughout the organization.

In this manner, the MBO process has accomplished at least two very important things:

- Each manager has shouldered the responsibility for his area of the organization, and defined that responsibility with a written list of objectives; and
- 2. the system has developed a comprehensive set of individual and organizational goals.

This business world system, of course, is not directly applicable to the governmental world of highway safety management. But the key element of the system, clearly identified goals and objectives, is as applicable to highway safety management as to any other form of management. The NHTSA seems to have picked up this fact and substituted problem identification for the mutually agreed upon objectivies of classical MBO. It would seem clear in the governmental context that if the principal problems are identified, some consensus can be reached as to approaches to their solution. If, however, the problems are not in some way identified, then activities will remain fragmented, misdirected, and ineffectual. Problem identification is dependent, however, upon complete and accurate data, and so it seems that any effort to implement MBO in state highway safety programming and planning must of necessity be accompanied by efforts at improving the traffic records (in this case management information) system.

#### VIRGINIA'S HIGHWAY SAFETY MANAGEMENT SYSTEM

Beginning with the first annual work program in 1971, Virginia has always requested and received sub-element plans from the state agencies which have responsibility in one or more of the federal highway safety standards as well as sub-element plans from the local highway safety commissions, which according to Virginia law must have ongoing highway safety programs. At present the state has 139 local highway safety commissions.

The organization and administration of the Virginia highway safety program is shown in Figures 2 and 3. Figure 2 depicts Virginia's highway safety program structure and shows the federal highway safety program standards, the state agencies responsible for their implementation, and the programs of evaluation and training assumed by the Highway Safety Division of Virginia under its planning and administra-

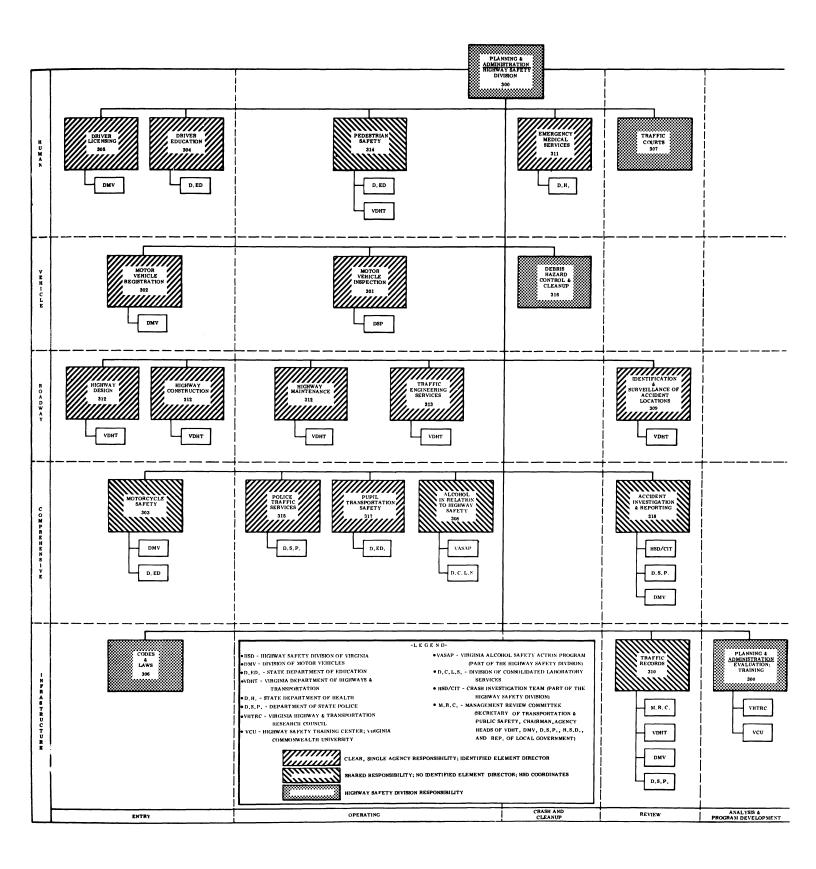
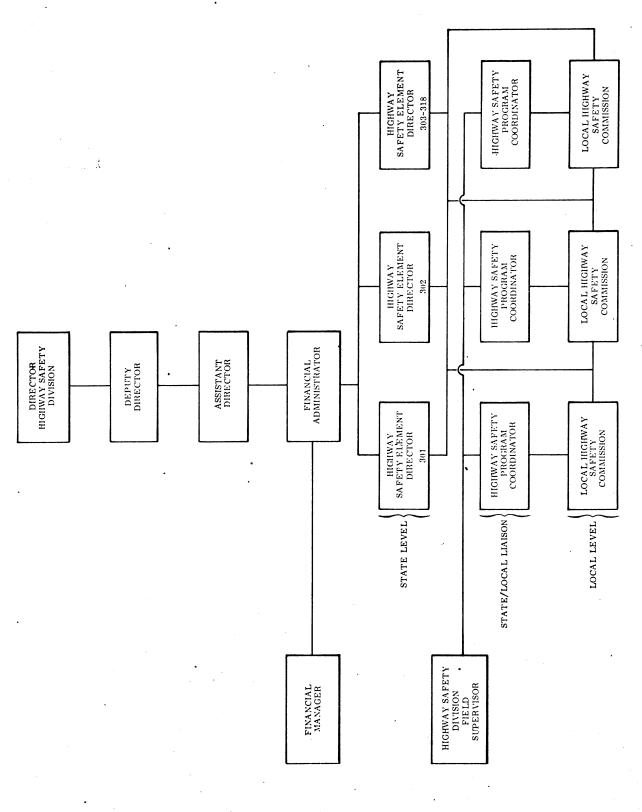


Figure 2. Commonwealth of Virginia highway safety program structure.



Flow chart for state and local annual highway safety work programs. Figure 3.

tion requirements. It is clear from the chart, for example, that Driver Licensing (Standard 305) is the responsibility of the Division of Motor Vehicles. DMV's driver services administrator serves as the element director of the 305 Standard and all AHSWP materials relating to Standard 305 are routed to him. Similarly it can be seen that Standard 304 - Driver Education, is the responsibility of the Department of Education, where the supervisor of driver education services is the element director. Alternatively, one can see that Standard 314 - Pedestrian Safety, is somewhat different from the preceding two in that there is no single state agency responsible for implementation. Here the State Department of Education and the Department of Highways and Transportation share primary responsibility. In this case persons having administrative responsibility within each department for Pedestrian Safety programs submit AHSWP materials on Standard 314. Finally, it can be seen that Standard 307 - Traffic Courts, illustrates a third kind of program area. there is no existing state agency to assume standard responsibility so the Highway Safety Division itself seeks to implement the Standard. One of the Division's staff members serves as element director for Standard 307.

Figure 2 shows the Virginia Highway Safety Program structure at the state level, but does not show the way in which the state program is coordinated with local programs. Figure 3 shows the state/local interface. Section 2.1-64.19 of the Code of Virginia provides that "each county and city within the State shall have a local highway safety commission." While many of the federal highway safety program standards do not have locally administered activities (Driver Licensing, Periodic Motor Vehicle Inspection) many do have such programs. Hence, the Highway Safety Division attempts to assist local commissions and coordinate programs with them to the maximum extent feasible. The Highway Safety Division has appointed ten highway

safety program coordinators covering ten geographic areas consistent with the state's 22 planning districts to handle program coordination. (Factors such as size and population of the area help determine the number of planning districts which are assigned to a coordinator. Each coordinator is responsible for at least 2 planning districts but no one coordinator is responsible for more than 3.) These program coordinators report to the Division's field supervisor. The coordinators work with local commissions in the ten areas as well as agencies and organizations (police departments, rescue squads, etc.) representing highway safety programs, in striving to promote effective safety program management. One principal responsibility and tool for program management is the annual work program required by the Division of each locality interested in federal funding for its activities.

#### A REVISED AHSWP SYSTEM

Using the completed forms submitted by state agencies for the PRIS and the descriptions of met and un-met data requirements of the state traffic records system produced by the traffic records project team, the AHSWP format in Virginia has been changed dramatically. Each annual work program document now sent to the state agencies and localities begins with a "Problem Identification Statement," which consists of the basic descriptive and program evaluation data that each element director or local commission chairman should have for the review of his program and planning for its future.

As an example, the problem identification statement for Standard 305 — Driver Licensing, sent to the Division of Motor Vehicles is shown in Figure 4. The driver services administrator at DMV will supply the information necessary to complete the problem identification statement as part of his AHSWP responsibility. Hopefully, these data will be used by him as he completes the revised sub-element plan sheet

State Agency	Division of Motor Vehicles	
Standard Area	Driver Licensing	

THE PROBLEM: Highway Safety programs, and especially individual highway safety projects, must be specifically directed at identified problems in order to produce results. This portion of your Annual Work Program is to help you identify the highway safety problems in your organization, and develop appropriate plans and procedures for the ultimate solution to that problem.

			DRIVI	ER LICENSE	INFORMATION							
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a.	Pass	• .										
	Fail											
4.	4. HOW OFTEN IS REEXAMINATION REQUIRED FOR:											
•	o. Rules of the Road (Yrs.)   Failure Rate (1)   Virginia has been granted a temporary waiver of this requirement.											
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	b. Personal Interviews Conducted											
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Figure 4. Problem identification statement.

<sup>\*</sup>Use additional sheet of paper if needed

<sup>\*\*</sup>List type of restrictions and against whom or what imposed on separate sheet of paper

shown in Figure 5. The sub-element plan sheets are only slightly revised from the earlier drafts used in Virginia and should therefore now be familiar to state administrators.

In a similar manner, problem identification statements specific to each standard or program element in Virginia have been prepared and sent to the state agencies as part of their AHSWP materials. While the one for Driver Licensing shown in Figure 4 is brief and therefore was chosen for this paper, others are four and five pages long. While they are by no means the last word on the subject, they present a beginning point for assessing programs and problems in highway safety activities in Virginia.

The revised AHSWP forms for local commissions are even more changed than those for the state agencies. Previously each commission was sent sub-element plan sheets for each standard having a local program equivalent, but there was no means of ensuring that the commissions in fact reviewed the implementation of each standard. The new AHSWP forms contain problem identification statements for 15 of the 18 standards. Only Driver Licensing, Motor Vehicle Registration, and Periodic Motor Vehicle Inspection are solely state functions.

In addition to the data relating to the operation of the local program, the new AHSWP forms include community and crash data specific to each commission. One of the most pervasive criticisms of the state traffic records system has been that it does not provide useful information to the localities. The new forms, with community, crash, and program information relevant to each local commission, are designed to start to overcome this problem.

Figure 6, as an example using one of the standards applicable to a local commission, shows the AHSWP form for Emergency Medical Services.

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1. State of Virginia	5. Drafted by_	Approved by_		7. Work & Objectives			•		6.			 10.			
Annual	Highway Safety Sub-element Plan			6.Resp.				·	8. Description						page 1970

Figure 5. Revised sub-element plan sheet.

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Figure 6. Local annual highway safety work program - fiscal year 1977.

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Figure 6. (Continued)

#### PRESENT AND FUTURE

The new AHSWP forms for FY 1977 were delivered to state agencies and local highway safety commissions in early December 1975. They will be completed and returned to the Director of the Highway Safety Division by February 15, 1976.

The first attempt at the new system differs greatly from what is expected in the future. The FY 1977 forms sent to the state agencies contained all blank data cells; the agencies must fill in the blanks from the data files which they maintain. In the future the Highway Safety Division will transfer these data to magnetic tape so that an automated storage and retrieval system for Virginia highway safety program data will commence. Periodically these data will be updated.

The new AHSWP forms delivered to the local commissions by the program coordinators contained completed data cells for community and crash data, as well as some data for the Motorcycle Safety and Pedestrian Safety Standards. It is planned that through further work on the traffic records project, each data cell for each problem identification statement will be computer generated to provide local commissions comprehensive data for evaluation and planning.

It is recognized that these efforts will take time. Nevertheless it now seems clear that there is available, in Virginia and probably elsewhere, the capability to integrate available program data, develop a technique to acquire previously unavailable program data, and to identify highway safety problems in a manner that the current annual work program format could not, or did not, achieve. The revisions are expected to improve and streamline the AHSWP process in the Commonwealth of Virginia.

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