

aspirations. Analyze inequities in present methods of State allocations.

Seek an increase in grants to States for enhancing their administrative capabilities, with the proviso that the States must increase their appropriations to be eligible for such aid.

Research and development

Assess relative effectiveness of intramural and extramural research programs as a basis for realignment of future budget allocations.

Emphasize research on physiological aspects of water and air quality with respect to man.

Evaluate productivity of research grants awarded to academic institutions, to industry contractors, and other extramural agencies, as contrasted with in-house results.

Encourage practical application of promising research findings by offering developmental grants to equipment manufacturers and others

INTRODUCTION

THE QUALITY OF THE ENVIRONMENT

In the last 10 years the Congress of the United States has increasingly interested itself in the impact of population growth, urbanization and industrialization upon the water, air and soil environment. This interest is manifested in an increasing number of legislative acts emanating from several committees in both the House and the Senate.

Administrative implementations resulting from these legislative directives have now had cumulative experiences running from 10 years to less than 1 year. Sufficient activity, however, has been engaged in to warrant a review of where we now stand in relation to the objectives originally formulated.

The present document attempts such a review, with full recognition of the difficulties and limitations in any effort to assess both national policy and resultant effects in fields as broad as water, air and soil pollution. Although each of these areas of interest has similar philosophical implications, they differ significantly in quantitative aspects, in geographic extent, in responsiveness to public, and private decision and in financial loads imposed upon offenders and values upon beneficiaries.

Waste output, for example, measured in gross terms of tons per day for an assumed urban unit of 1 million people, has relative order of magnitude, as follows:

- (a) Sewage: 500,000.
- (b) Refuse (solid wastes): 2,000.
- (c) Discharges into atmosphere: 1,000.
 - (i) Particles: 150.
 - (ii) SO_2 : 150.
 - (iii) Nitrogen oxides: 100.
 - (iv) Hydrocarbons: 100.
 - (v) Carbon dioxide: 500.

Water pollution has been chosen for major elaboration in the text which follows largely because its legislative history on the Federal level is largest, the record of implementation is more extensive, the magnitude of waste discharge is greatest, and administrative experience in