

STATE OF CALIFORNIA  
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT  
Division of Codes and Standards

INITIAL STUDY

I. BACKGROUND

1. Department of Housing and Community Development

This project is a response on the part of the Department of Housing and Community Development to the mandate of the Legislature as expressed in the State Housing Law, Sections 17910 - 17995 of the Health and Safety Code, specifically in Sections 17921 and 17922.

Section 17921 directs the Department to adopt, amend, and enforce rules and regulations for the protection of the public health, safety and general welfare of the occupant, and the public governing the erection, construction, and maintenance of all dwellings and structures in the state. The Department's mandate in Section 17921 to adopt rules and regulations for the protection of the public health, safety and general welfare provides the authority for the Department to act in areas not addressed or incompletely addressed by the Uniform Codes. Section 17922 directs that the rules and regulations adopted, amended or repealed from time to time be substantially the same requirements as are contained in the widely used Uniform Codes (such as the Uniform Building Code and the Uniform Plumbing Code). The Legislature has further directed that the Department is to consider local conditions and any amendments to the Uniform Codes.

Pursuant to Section 17958 the Law requires that the governing body of every city or county must adopt ordinances or regulations, within one year, imposing the same requirements as the State's, thus in effect the State regulations are also local regulations when this occurs. Section 17958.5 provides that a city or county may modify or change the requirements published in the State Building Standards Code based on finding of need due to local climatic, geographical, or topographical conditions, subject to certain actions and limitations required of these local entities.

2. Description of Proposed Project

The Department of Housing and Community Development proposes to approve the expanded use of plastic (non-metal) piping systems in the specific applications and conditions listed in the use matrix that follows. The uses are in basic conformance with the proposed 1982 Uniform Plumbing Code (UPC) as published by the International Association of Plumbing and Mechanical Officials (IAPMO). The matrix lists both those plastic pipe applications approved under the 1979 UPC and expanded uses proposed under the 1982 UPC. A copy of the relevant sections of the new code are attached to the end of this Initial Study.

3. Initial Study Authors

This Initial Study was prepared by the Department of Housing and Community Development, Division of Codes and Standards. The Plastic Plumbing Pipe Task Force, representing industry, labor, and interested state agencies participated in the study preparation. Coordination between the Task Force and the Department was provided by Michael C. McMillan, Department EIR Coordinator.

STATE OF CALIFORNIA  
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT  
Division of Codes and Standards

INITIAL STUDY

I. BACKGROUND

1. Department of Housing and Community Development

This project is a response on the part of the Department of Housing and Community Development to the mandate of the Legislature as expressed in the State Housing Law, Sections 17910 - 17995 of the Health and Safety Code, specifically in Sections 17921 and 17922.

Section 17921 directs the Department to adopt, amend, and enforce rules and regulations for the protection of the public health, safety and general welfare of the occupant, and the public governing the erection, construction, and maintenance of all dwellings and structures in the state. The Department's mandate in Section 17921 to adopt rules and regulations for the protection of the public health, safety and general welfare provides the authority for the Department to act in areas not addressed or incompletely addressed by the Uniform Codes. Section 17922 directs that the rules and regulations adopted, amended or repealed from time to time be substantially the same requirements as are contained in the widely used Uniform Codes (such as the Uniform Building Code and the Uniform Plumbing Code). The Legislature has further directed that the Department is to consider local conditions and any amendments to the Uniform Codes.

Pursuant to Section 17958 the Law requires that the governing body of every city or county must adopt ordinances or regulations, within one year, imposing the same requirements as the State's, thus in effect the State regulations are also local regulations when this occurs. Section 17958.5 provides that a city or county may modify or change the requirements published in the State Building Standards Code based on finding of need due to local climatic, geographical, or topographical conditions, subject to certain actions and limitations required of these local entities.

2. Description of Proposed Project

The Department of Housing and Community Development proposes to approve the expanded use of plastic (non-metal) piping systems in the specific applications and conditions listed in the use matrix that follows. The uses are in basic conformance with the proposed 1982 Uniform Plumbing Code (UPC) as published by the International Association of Plumbing and Mechanical Officials (IAPMO). The matrix lists both those plastic pipe applications approved under the 1979 UPC and expanded uses proposed under the 1982 UPC. A copy of the relevant sections of the new code are attached to the end of this Initial Study.

3. Initial Study Authors

This Initial Study was prepared by the Department of Housing and Community Development, Division of Codes and Standards. The Plastic Plumbing Pipe Task Force, representing industry, labor, and interested state agencies participated in the study preparation. Coordination between the Task Force and the Department was provided by Michael C. McMillan, Department EIR Coordinator.

II. ENVIRONMENTAL IMPACTS

(Explanations of all "yes" and "maybe" answers are provided in Section III).

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
1. Earth. Will the proposal result in:			
a. Unstable earth conditions or in changes in geologic substructures?	_____	<u>X</u>	_____
b. Disruptions, displacements, compaction or overcovering of the soil?	_____	_____	<u>X</u>
c. Change in topography or ground surface relief features?	_____	_____	<u>X</u>
d. The destruction, covering or modification of any unique geologic or physical features?	_____	_____	<u>X</u>
e. Any increase in wind or water erosion of soils, either on or off the site?	_____	_____	<u>X</u>
f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?	_____	_____	<u>X</u>

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?	_____	_____	<u>X</u>
2. Air. Will the proposal result in:			
a. Substantial air emissions or deterioration of ambient air quality?	_____	<u>X</u>	_____
b. The creation of objectionable odors?	_____	_____	<u>X</u>
c. Alteration of air movement, moisture, or temperature, or any change in climate, either locally or regionally?	_____	_____	<u>X</u>
3. Water. Will the proposal result in:			
a. Changes in currents, or the course of direction of water movements, in either marine or fresh waters?	_____	_____	<u>X</u>
b. Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?	_____	_____	<u>X</u>
c. Alterations to the course or flow of flood waters?	_____	_____	<u>X</u>
d. Change in the amount of surface water in any water body?	_____	_____	<u>X</u>
e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?	_____	<u>X</u>	_____
f. Alteration of the direction or rate of flow of ground waters?	_____	_____	<u>X</u>
g. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	_____	_____	<u>X</u>
h. Substantial reduction in the amount of water otherwise available for public water supplies?	_____	_____	<u>X</u>
i. Exposure of people or property to water related hazards such as flooding or tidal waves?	_____	_____	<u>X</u>

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
4. <b>Plant Life.</b> Will the proposal result in:			
a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?	_____	_____	<u>X</u>
b. Reduction of the numbers of any unique, rare or endangered species of plants?	_____	_____	<u>X</u>
c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	_____	_____	<u>X</u>
d. Reduction in acreage of any agricultural crop?	_____	_____	<u>X</u>
5. <b>Animal Life.</b> Will the proposal result in:			
a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms or insects)?	_____	_____	<u>X</u>
b. Reduction of the numbers of any unique, rare or endangered species of animals?	_____	_____	<u>X</u>
c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	_____	_____	<u>X</u>
d. Deterioration to existing fish or wildlife habitat?	_____	<u>X</u>	_____
6. <b>Noise.</b> Will the proposal result in:			
a. Increases in existing noise levels?	_____	<u>X</u>	_____
b. Exposure of people to severe noise levels?	_____	_____	<u>X</u>
7. <b>Light and Glare.</b> Will the proposal produce new light or glare?	_____	_____	<u>X</u>
8. <b>Land Use.</b> Will the proposal result in a substantial alteration of the present or planned land use of an area?	_____	_____	<u>X</u>
9. <b>Natural Resources.</b> Will the proposal result in:			
a. Increase in the rate of use of any natural resources?	_____	<u>X</u>	_____

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
b. Substantial depletion of any nonrenewable natural resource?	_____	_____	<u>X</u>
10. Risk of Upset. Will the proposal involves			
a. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?	_____	<u>X</u>	_____
b. Possible interference with an emergency response plan or an emergency evacuation plan?	_____	<u>X</u>	_____
11. Population. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?	_____	<u>X</u>	_____
12. Housing. Will the proposal affect existing housing, or create a demand for additional housing?	_____	<u>X</u>	_____
13. Transportation/Circulation. Will the proposal result in:			
a. Generation of substantial additional vehicular movement?	_____	_____	<u>X</u>
b. Effects on existing parking facilities, or demand for new parking?	_____	_____	<u>X</u>
c. Substantial impact upon existing transportation systems?	_____	_____	<u>X</u>
d. Alterations to present patterns of circulation or movement of people and/or goods?	_____	_____	<u>X</u>
e. Alterations to waterborne, rail or air traffic?	_____	_____	<u>X</u>
f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?	_____	_____	<u>X</u>
14. Public Services. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:			
a. Fire protection?	_____	<u>X</u>	_____
b. Police protection?	_____	_____	<u>X</u>
c. Schools?	_____	_____	<u>X</u>

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
d. Parks or other recreational facilities?	_____	_____	<u>X</u>
e. Maintenance of public facilities, including roads?	_____	_____	<u>X</u>
f. Other governmental services?	_____	_____	<u>X</u>
15. Energy. Will the proposal result in:			
a. Use of substantial amounts of fuel or energy?	_____	_____	<u>X</u>
b. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?	_____	<u>X</u>	_____
16. Utilities. Will the proposal result in a need for new systems, or substantial alterations to the following utilities:			
a. Power or natural gas?	_____	_____	<u>X</u>
b. Communications systems?	_____	_____	<u>X</u>
c. Water?	_____	_____	<u>X</u>
d. Sewer or septic tanks?	_____	_____	<u>X</u>
e. Storm water drainage?	_____	_____	<u>X</u>
f. Solid waste and disposal?	_____	_____	<u>X</u>
17. Human Health. Will the proposal result in:			
a. Creation of any health hazard or potential health hazard (excluding mental health)?	_____	<u>X</u>	_____
b. Exposure of people to potential health hazards?	_____	<u>X</u>	_____
18. Aesthetics. Will the proposal result in the obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?	_____	_____	<u>X</u>
19. Recreation. Will the proposal result in an impact upon the quality or quantity of existing recreational opportunities?	_____	_____	<u>X</u>
20. Cultural Resources.			
a. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archaeological site?	_____	_____	<u>X</u>

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
b. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?	_____	_____	<u>X</u>
c. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?	_____	_____	<u>X</u>
d. Will the proposal restrict existing religious or sacred uses within the potential impact area?	_____	_____	<u>X</u>
<b>21. Mandatory Findings of Significance.</b>			
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	_____	<u>X</u>	_____
b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.)	_____	<u>X</u>	_____
c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)	_____	<u>X</u>	_____
d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	_____	<u>X</u>	_____

### III. DISCUSSION OF ENVIRONMENTAL EVALUATION

1.a. Earth. Approval of the expanded use of plastic plumbing pipe may result in unstable earth conditions. If plastic pipe carrying liquid under pressure, when installed under slab foundations, fails (leaks) more frequently than metal pipe, the soil beneath the foundations may become saturated. This saturation may lead to unstable earth conditions in situations such as hillside homes, structures on expansive soils, or structures near areas of previous landslides or soil creep.

2.a. Air. Should the expanded use of plastic plumbing pipe be approved in California, a significant demand may be produced for additional pipe. This demand may lead to increased production or a general increase in activity at major chemical plants. Increased production may produce an increase in air emissions with a potential decrease in ambient air quality.

Major chemical and petrochemical plants in California are operated under permits issued by Air Quality Management Districts. An increase in production or refinery operations within the limits of existing air quality permits is not considered a significant impact. To increase production above limits set in existing permits would require a new permit or permit modification by the Air District. At that time, the impact and potential mitigation measures for air quality would be assessed by the Air District. Expanded use of plastic plumbing pipe is not expected to result in substantial new air emissions or a deterioration of ambient air quality.

3.e. Water. Should the expanded use of plastic plumbing pipe be approved in California, toxic substances may be released in small quantities from the pipe and pipe solvents into the liquid within the pipe in quantities more or less than from metal pipes and solders. There is considerable controversy in the scientific and technical community over what substances may leach from plastic plumbing materials and in what quantities. A similar controversy exists for metal pipes. The potential impact, if any, of plastic pipe leachates from an expanded use of plastic pipe on surface water quality is not known. Expanded use of plastic plumbing pipe may result in an alteration of surface water quality.

5.d. Animal Life. Approval of the expanded use of plastic plumbing pipe may lead to a deterioration of existing aquatic habitat. As discussed under item 3.e., the potential impact of plastic pipe leachates on surface water in relation to the existing impact from metal pipe leachate is not known. If the impact was adverse, it may in turn affect aquatic organisms and their habitat. The magnitude of the potential impact on aquatic habitats should be assessed.

6.a. Noise. Submitted into the record of the plastic pipe project is a letter from Hilliard and Bricken, Consulting Acoustic and Energy Engineers, Santa Ana, California, stating, "There is strong evidence that there is a real advantage of using cast iron (rather than plastic riser drain pipe) to decrease the rushing noise of water." In homes where plastic pipe is in use, however, no significant impact has been reported from increased noise levels of water flowing through the pipes. Expanded use of plastic plumbing pipe is not expected to produce a significant adverse increase in existing noise levels.

- 9.a. Natural Resources. Approval of the expanded use of plastic plumbing pipe may result in a change in the rate of use of petroleum, a natural resource. Approval may result in a decrease in the rate of use of copper (in copper pipe) and iron and zinc (in galvanized pipe). The magnitude of the petroleum increase, and whether it would be a significant impact, is not known.
- 10.a. and b. Risk of Upset. In the event of a fire in a building containing plastic plumbing pipe, toxic fumes may be released from the burning pipe. Different types of plastic would produce different fumes on combustion. If toxic fumes or smoke were produced, they may interfere with emergency evacuation. Additional information may be needed before it can be determined if plastic pipe would contribute to unusual fire spread or that the toxicity generated by the combustion of plastic pipe would not extend beyond the area of initial exposure in quantities sufficient to prove hazardous from through-penetrations in fire-rated construction or within fire-rated construction.
11. Population. Approval of the expanded use of plastic plumbing pipe may alter the location, distribution, density, or growth rate of an area. Should the potential reduced cost of plastic pipe have a significant effect on the cost of housing, the cost reduction may alter population distributions. The availability of new lower cost housing may attract populations from other areas.
12. Housing. Approval of the expanded use of plastic plumbing pipe in California may affect existing housing and create a demand for additional housing. If plastic plumbing pipe is found to be both less expensive to purchase and to install, the cost of constructing new homes may be reduced.
- 14.a. Public Services. As discussed previously in Items 10.a. and b., the use of plastic plumbing pipe in multi-story buildings may produce toxic fumes or smoke in quantities that may prove hazardous. Should plastic plumbing pipe be shown to create a hazardous situation during a fire, approval of the expanded use of plastic plumbing pipe may result in a need for altered governmental services, namely fire protection.
- 15.b. Energy. Expanded use of plastic plumbing pipe may or may not require a net increase in energy consumption over the manufacture, shipping, and installation of conventional pipe materials. The relative energy use between pipe materials needs to be assessed.
- 17.a. and b. Human Health. The most significant source of potential adverse impact which may occur if plastic pipe is approved for expanded plumbing use is in the area of human health. There may be a potential health hazard from chemicals leached into drinking water from the pipe and solvents used in joining the pipe. Each type of pipe may have different types of leachate. The quantities of such leachates, including singularly, in combination, and/or in aggregate, their relevant acute or chronic adverse effects on human health, and the relative contribution exposure to plastic pipe pollutants would have on an occupant of housing using plastic pipe needs to be assessed, as is feasible. The similar impact should be assessed relative to the effect from approved metal pipes (such as lead pipe and lead-soldered copper pipe and associated fluxes).

The manufacturing and installation of some types of plastic pipe may expose plant workers or pipe-trades craftsmen to potential dermal and inhalation health hazards from solvent vapors, solvent skin contact, and airborne particulates. The health and safety impact may be greater or less than that associated with metal pipe installation. The potential for significant adverse impacts of both metal and plastic pipe on worker safety should be assessed and compared.

- 21.a. Quality of the Environment. Approval of the expanded use of plastic plumbing pipe may degrade the quality of the environment. As described under Items 3.e. and 5.d., the expanded use of plastic pipe may cause a change in surface water quality and may cause a deterioration of existing aquatic habitat.
- 21.b. Short-Term vs. Long-Term Goals. Approval of the expanded use of plastic plumbing pipe may achieve short-term goals (e.g., lower cost, reduced energy use, easier installation) to the disadvantage of long-term goals (e.g., potential for continuous exposure to chemicals in water supply).
- 21.c. Cumulative Impact. The cumulative impact of expanded use cannot be assessed until the magnitude of the individual impacts is determined.
- 21.d. Effects on Humans. Expanded approval of plastic plumbing pipe may produce an adverse effect directly or indirectly on human beings.

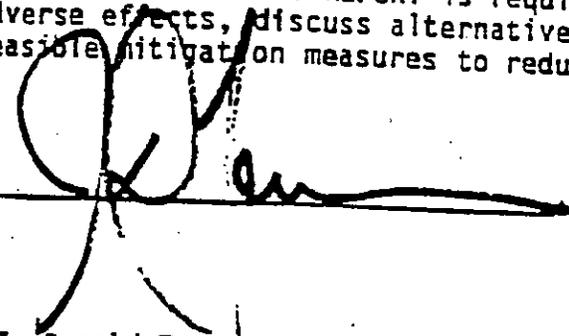
#### Additional Potential Impacts.

Fiscal. Approval of the expanded use of plastic plumbing pipe may reduce the cost of plumbing materials for construction. The magnitude of cost difference between metal and non-metal materials as a percentage of total construction cost should be assessed. Potential differences in labor costs for installation of the two materials should be assessed.

#### IV. DETERMINATION

On the basis of this initial evaluation, I find approval of the expanded use of plastic plumbing pipe MAY have a significant effect on the environment. An ENVIRONMENTAL IMPACT REPORT is required to assess the magnitude of any potential adverse effects, discuss alternatives to the project as proposed, and determine feasible mitigation measures to reduce identified impacts.

Date: \_\_\_\_\_

By:  I. Donald Turner, Director  
Department of Housing and Community Development