Factors Relating to Providing Future Health Care for Increased Population In Support of Coal Energy Development

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Obviously, many questions are presently unanswered relating to possible detrimental effects that large scale coal energy development would have on air quality, as well as the impacts that emissions would have on plants, animals and humans. Additional unanswered questions include how to dispose of solid waste materials satisfactorily and how to successfully reclaim strip mined lands. Many of the presently unanswered questions relating to coal energy development concern human health. The quality of the future natural and man-made environment in southwestern North Dakota will have a decided influence on the health care delivery system in that area.

Once basic questions relating to the environmental impact of coal energy development are answered, an initial determination can be made as to a desirable level for future coal energy development in western North Dakota based on environmental concerns. However, other related factors must be considered in determining the level and location of future large-scale coal energy development. These factors include preventing possible serious, adverse social and economic impacts on western North Dakota should the coal energy industry decide to abandon their energy-producing plants in western North Dakota at the end of their life span (estimated to be about 30 years). This could happen if other more economically feasible and environmentally acceptable methods for producing energy are made operational during the next 20 to 30 years. In this event, southwesern North Dakota would undoubtedly lose much of the population gained from coal energy development, and facilities provided for health care would no longer be required.

For discussing the future health care delivery system for State Planning Region VIII, we will assume that ways will be found to satisfactorily protect the long term interests of western North Dakota and the state as a whole from potential hazards that could result from large scale coal energy development. The level of development to be assumed is that referred to as the most extensive development forecast by the Northern Great Plains Resource Program. Such coal energy development would result in nine gasification plants and four large capacity electric generating plants being located within State Planning Region VIII. Population would increase by about 60,000 persons within the next 15 to 20 years in that event. The 1970 population of the eight counties within the region was 42,609, or about four persons per square mile. Projected population for 1990 would more than double to about 100,000.

One interesting and important question is where the increased population would locate and what effect varying population distribution patterns would have on the present health care delivery system in State Planning Region VIII. We might ask if the question of population distribution that would result from extensive coal energy development is important enough to warrant the enactment of policies by local and state government units to deliberately influence the location of population increases. I believe that this question is important enough that units of local government should develop and implement sound policies to influence future population distribution should extensive coal energy development be approved. Unless such policies are effected, it will be extremely difficult to plan for the expansion of community facilities and services in support of future population increases.

First, as we consider policies to influence future population distribution, I believe that it is in the region's best interest not to allow scattered housing and related development to occur throughout the countryside. This would destroy or seriously detract from the rural landscape and could result in many health and related problems, particularly with regard to sewage disposal and water supply. Scattered population would also increase the cost of providing for health care and other required services. Preventing future scattered nonfarming population can be done by units of local government enacting and enforcing zoning ordinances.

Another important consideration in planning for future health care services in State Planning Region VIII is the comparative cost of expanding existing public and private facilities and services as opposed to providing new facilities and services at new locations. This raises the question of how expandable are such existing facilities as the do-

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mestic water supply and sewage disposal systems, as well as hospitals and nursing homes. This also raises the question of how large a population a community must have to support health care facilities and services at economical levels and what range of services would have to be provided.

In looking at State Planning Region VIII, it is apparent that several of the larger cities have made substantial investments in health care and related facilities. This includes Dickinson and Richardton in Stark county, Hettinger in Adams county, Bowman in Bowman county and Beach in Golden Valley county. The facilities in these cities are capable of reasonable expansion to meet increased population needs.

In order to understand where future population increases might occur, it is interesting to look at the population distribution pattern that would most likely result with minimum influence from units of local and state government (Table 1). This population distribution, as described in the Little Missouri Grasslands Study, is what might occur should there be no explicit and applied policies by units of local and state government to influence future population distribution, with the exception of zoning which would not allow non-farm housing in rural areas. Major factors considered in this model for determining future population distribution are the existing transportation network, distance from general proposed plant locations to existing communities and the population size of existing communities. It can readily be seen from this model that many present small communities would experience sizable population increases. Most of these communities do not presently provide health care facilities and services, so they would have to decide what health facilities and services they would have to offer to adequately serve the needs of the increased population.

The future population distribution pattern that would likely result from minimum government intervention would undoubtedly increase the population of many of the small communities throughout Region VIII. However, an important question to answer would be the cost to the communities to provide health care and related facilities and services and how they would meet these costs. Would it be advisable and in the long term interest of State Planning Region VIII to have explicit policies in effect by units of local and state government that would encourage population increases to locate in those cities that already have a base for providing health care and other required services, rather than to locate in smaller communities?

The following questions are of particular importance in considering future population distribution and how varying patterns might affect the health care delivery system in State Planning Region VIII.

1. With cost considerations in mind, would it be advisable to encourage the location of future population increases in existing communities that have hospitals and other health care facilities rather than to build new facilities in communities where they do not presently exist?
2. How large a population should a city have before it is reasonable to develop hospital and related health care facilities?
3. What range of health facilities and services are required for cities of varying sizes?
4. Should consideration be given to looking into the possibility of developing one or more new communities at locations central to future industrial development that would provide health care facilities and services for a large percentage of population increases?
5. Would widespread dispersal of population increases throughout rural areas result in a serious problem with regard to providing emergency health care services, including ambulance services? Would this problem be critical enough to warrant a policy that would encourage the location of future population increases within existing or new communities rather than settling throughout the countryside?
6. Is it reasonable to assume that existing health care facilities in cities within State Planning Region VIII could be expanded to provide for the health care needs of an additional 60,000 persons should population increases locate in these cities within the next 15 years?
7. Would a population increase of about 60,000 persons in existing cities offering health care facilities in State Planning Region VIII require providing health care services not presently available? If so, what types of additional services would have to be provided?
8. Would population increases resulting from coal energy development be likely to require any specialized health care services because of the nature of the industry and because of the need to bring in large numbers of construction workers during periods of plant construction?
9. How serious is the question of future population distribution in State Planning Region VIII as it relates to the delivery of health care services?

There should be widespread discussion of these questions by government officials and local residents in the interest of developing policies to guide or influence future population distribution should extensive coal energy development occur. The Southwest Area Health Planning Council should take the leadership in initiating these discussions.