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 environ­
ment in southwestern North Dakota will have a decided influence on the health
care delivery system in that area.

Once basic questions relating to the environ­
mental 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 en­
ergy development. These factors include prevent­
ing 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 economi­
ically feasible and environmentally acceptable
methods for producing energy are made oper­
tional during the next 20 to 30 years. In this
event, southwestern North Dakota would undoub­
tedly 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 Re­
gion 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 coun­
ties 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 pat­
terns would have on the present health care de­
ivery system in State Planning Region VIII. We
might ask if the question of population distribu­
tion that would result from extensive coal energy
development is important enough to warrant the
enactment of policies by local and state govern­
ment 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 fu­
ture population distribution, I believe that it is
in the region's best interest not to allow scattered
housing and related development to occur through­
out the countryside. This would destroy or serious­
ly detract from the rural landscape and could re­
sult in many health and related problems, par­
ticularly 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
non-farming population can be done by units of local
government enacting and enforcing zoning ordi­
nances.

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 distribu-

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.

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