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conducted in the

Department of Geography

College of Earth and Mineral Sciences

A REPORT ON

ANTHRACITE OPEN PIT MINING

— A FEASIBILITY STUDY —

PART III

ESTIMATING RELOCATION COSTS

Report Exhibit No. 3

by

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I. Introduction

Development of large-scale surface mining of anthracite coal would undoubtedly require the purchase of real property and could conceivably require the relocation of a number of present land uses. Such acquisition of property rights and, particularly, relocation of communities would create a number of economic and social costs. Table 1 outlines both monetary and non-monetary dimensions of the relocation process.

The purpose of the overall anthracite feasibility project has been to estimate the order of magnitude of mining and associated costs. Thus, it is imperative to consider costs likely to be incurred as a result of relocation activities, and to estimate the impact of these costs on the price of coal produced. Therefore, in this exhibit, a variety of quantifiable costs of relocation are estimated for the sample site, using a suggested methodology for such estimation.

There are several provisos that must be understood in considering the following discussion:

(1) Cost estimates are based upon approximation techniques derived with advice of experts in respective fields and from contemporary literature citations;

(2) These estimating procedures have not been tested against real final costs in acquiring property or relocating land uses for activities such as mining, an important direction for future research;

(3) In many cases, relocation costs are based on actions analogous to mining, such as relocation associated with highway construction

Table 1. Dimensions of the Relocation Process

I. Economic Values

A. Monetary Dimensions

1. Local Dimensions

a. Acquisition or relocation of:

i. Landmarks, historical sites, monuments

ii. Salvage archaeology

iii. Government buildings

iv. Community buildings

v. Schools

vi. Libraries

vii. Churches

viii. Cemeteries

ix. Post offices

x. Financial institutions

xi. Hospitals and clinics

xii. Communication media

xiii. Recreational facilities

xiv. Open space

xv. Fire services

xvi. Police and penal facilities

xvii. Quasi-public social services

xviii. Commercial properties

xix. Industrial properties

xx. Residential properties

[Each of the above includes real property plus improvements--buildings, driveways, landscaping]

Table 1 (continued)

b. Adjudication expenses

c. Disruption/relocation of:

i. Electrical transmission lines

ii. Local electric service networks

iii. Telephone services

iv. Cable television

v. Sanitary sewage treatment plants and networks

vi. Storm sewage networks

vii. Water treatment and distribution systems

viii. Alleys, streets, highways

ix. Transmission pipelines

x. Local natural gas pipelines

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   c. Early retirement

6. Welfare

7. Social control--police services

8. Crime

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11. Political redistricting

12. Adjustment of school service areas

Table 1 (continued)

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    d. Crime
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    b. Sex composition
    c. Dynamics--natural
    d. Dynamics--migration
    e. Ethnic/racial composition
12. Community
    a. Social networks
    b. Attitudes
    c. Political patterns
    d. Place identity

Table 1 (continued)

13. Equity of distribution of effects

    a. Beneficial effects

    b. Adverse effects

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15. Educational opportunities

16. Cultural opportunities

or dam building; although these situations provide relatively stringent compensation standards, they are public rather than private actions. Certainly the legal as well as practical bases for relocation for private mining activity must be explored in subsequent research;

(4) The data estimated here are for heuristic purposes rather than actual planning. Although the data are based on apparently reliable sampling or estimation procedures, they have not been confirmed by professional assessment nor field checking. It was felt that detailed field checking in a sample area not expected to be mined would unnecessarily arouse community interest and potential hostility.

(5) The area selected for study, the Girardville vicinity of Schuylkill County, Pennsylvania, was chosen as a "worst case" sample region, since it would provide the basis for assessing the financial feasibility of anthracite mining where relocation of a town, various transportation and utility networks, and a stream would be required. The costs of providing palliative reclamation from former deep and shallow surface mines had been estimated elsewhere (Report SR-106), and was the principle criteria for choosing the sample area.

(6) There has been no attempt to assess the social costs and benefits of community relocation. Clearly there are important social and political questions that must be addressed, particularly with specific relocation strategies in mind. It is suggested that sociological research be developed in this direction should large-scale anthracite surface mining prove attractive for further assessment.

(7) Finally, there have been no attempts to specify to whom compensation would necessarily be directed. For example, the value of streets is

often considered to be incorporated as part of the value of adjacent properties. Nevertheless, should it prove desirable to provide a new town setting to replace an existing community, costs of new network construction (streets, sewage systems) to replace old systems lost may be borne by the relocating agency. Thus it is useful to specify all value lost, although the specific destination of compensation may be unclear. A further example is compensation for municipal buildings when a municipality might, in fact, be dissolved as a result of relocation. The remainder of this exhibit documents estimation procedures (and their application to the sample site) for suggesting the magnitude of costs associated with the disruption of existing communities and land uses for anthracite surface mining. First, relocation of residences and acquisition of real residential property is addressed. Second, similar acquisition and relocation of businesses and non-profit organizations is estimated. Third, costs of disruption or relocation of utility and transportation networks are suggested. Finally, property acquisition and relocation costs for the sample area are consolidated, and their impact on the mined cost of anthracite coal is estimated.

It is important to emphasize that this research does not purport to be either a benefit-cost analysis nor an assessment of impacts of potential mining. As an initial overview of major items of property acquisition and relocation expenditure, this discussion must be supplemented by timely financial analysis and impact assessment for specific mining proposals on sites selected as offering greatest potential for mine development.*

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*Although Pennsylvania has no impact assessment requirement for state or private activities, agencies or firms proposing mine development in areas requiring relocation may enhance cooperation of local communities and Commonwealth agencies by using an impact assessment procedure available for public scrutiny and input. Relevant references include (28, 17).

II. Acquisition and Relocation of Residential Property

Owners of real property and occupants of residences are entitled, under Federal standards (PL 91-646, 1971) to compensation for acquired property, moving costs, and dislocation expenses. Actual amounts of compensation are determined for each relocation event, subject to legislated maxima for moving and relocation expenses. Here, we estimate aggregate acquisition costs for the sample area by assessing real property values and suggest relocation expenses by reference to average compensation provided by federal and state agencies for relocation related to highway construction.

A. Estimation of Residential Property Values

In the absence of current professional property assessment for the sample area, it was necessary to use property tax assessment rolls as a basis for estimation. The basis of estimation included the following steps:

(1) A spatially stratified random sample of residences, with stratification based on 1000-foot grid squares, including areas in the immediate borough vicinity and in other segments of the sample area;

(2) Pre-selection of sample residential properties from property maps; the sample included approximately ten percent of borough-vicinity residential properties and 32 percent of rural properties.

(3) Acquisition of data on sample properties from the Schuylkill County tax office, including assessed market value and most recent sale price and date;

(4) Estimation of average ratio of recent market value to assessed market value, using post-1970 sale prices, removing nominal sale prices that suggested within-family transfers; derived ratios were 1.58 for the borough and 1.87 for areas outside the borough.

(5) Conversion of assessed values to approximate market values, using:

(a) the multiplier derived in (4), for properties not sold recently;

or (b) the sale price, if sold recently.

(6) Extrapolation from the sample obtained in (5), to the whole community, using average values maintaining the borough vicinity/ rural area dichotomy.

Estimates based on this procedure do not include improvements completed since the last official assessment; changes in property values that might precede property acquisition; changes in property values that could occur should mining in the vicinity preceed full-scale property acquisition; nor specific values of properties not chosen by the sampling process. Federal standards for property acquisition are cited in Table 2 . Results of property estimation are included in Table 3 . Note that some ex-urban areas have private houses on land owned by mining companies. Total estimated residential property value in the sample area is $6,261,569.

B. Estimation of Residential Relocation Expenses and Allowances

In addition to possible compensation for loss of real property, Federal and Commonwealth standards provide for moving expenses; dislocation allowances; and relocation allowances to cover increased rental or purchase prices of replacement housing of similar quality.

(1) Moving expenses. Tables 4 and 5 provide Federal legislation and Pennsylvania Department of Transportation guidelines for provision of moving costs, relocation expenses, and dislocation allowances for residential properties.* For moving expenses, the occupant may elect a fixed schedule payment and dislocation allowance, or reimbursement of actual moving expenses (Table 5). For the sample location, the 1974 average Federal Highway Administration payment for moving and

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*Comparable Federal Highway Administration guidelines may be found in Code of Federal Regulations, Vol. 23, Highways, Part 740, "Relocation Assistance." (15)

Table 2. Federal Property Acquisition Standards (PL 91-646, 1971)

TITLE III—UNIFORM REAL PROPERTY ACQUISITION POLICY

UNIFORM POLICY ON REAL PROPERTY ACQUISITION PRACTICES

SEC. 301. In order to encourage and expedite the acquisition of real property by agreements with owners, to avoid litigation and relieve congestion in the courts, to assure consistent treatment for owners in the many Federal programs, and to promote public confidence in Federal land acquisition practices, heads of Federal agencies shall, to the greatest extent practicable, be guided by the following policies:

(1) The head of a Federal agency shall make every reasonable effort to acquire expeditiously real property by negotiation.

(2) Real property shall be appraised before the initiation of negotiations, and the owner or his designated representative shall be given an opportunity to accompany the appraiser during his inspection of the property.

(3) Before the initiation of negotiations for real property, the head of the Federal agency concerned shall establish an amount which he believes to be just compensation therefor and shall make a prompt offer to acquire the property for the full amount so established. In no event shall such amount be less than the agency's approved appraisal of the fair market value of such property. Any decrease or increase in the fair market value of real property prior to the date of valuation caused by the public improvement for which such property is acquired, or by the likelihood that the property would be acquired for such improvement, other than that due to physical deterioration within the reasonable control of the owner, will be disregarded in determining the compensation for the property. The head of the Federal agency concerned shall provide the owner of real property to be acquired with a written statement of, and summary of the basis for, the amount he established as just compensation. Where appropriate the just compensation for the real property acquired and for damages to remaining real property shall be separately stated.

(4) No owner shall be required to surrender possession of real property before the head of the Federal agency concerned pays the agreed purchase price, or deposits with the court in accordance with section 1 of the Act of February 26, 1931 (46 Stat. 1421; 40 U.S.C. 258a), for the benefit of the owner, an amount not less than the agency's approved appraisal of the fair market value of such property, or the amount of the award of compensation in the condemnation proceeding for such property.

(5) The construction or development of a public improvement shall be so scheduled that, to the greatest extent practicable, no person lawfully occupying real property shall be required to move from a dwelling (assuming a replacement dwelling as required by title II will be available), or to move his business or farm operation, without at least ninety days' written notice from the head of the Federal agency concerned, of the date by which such move is required.

(6) If the head of a Federal agency permits an owner or tenant to occupy the real property acquired on a rental basis for a short term or for a period subject to termination by the Government on short notice, the amount of rent required shall not exceed the fair rental value of the property to a short-term occupier.

(7) In no event shall the head of a Federal agency either advance the time of condemnation, or defer negotiations or condemnation and the deposit of funds in court for the use of the owner, or take any other action coercive in nature, in order to compel an agreement on the price to be paid for the property.

(8) If any interest in real property is to be acquired by exercise of the power of eminent domain, the head of the Federal agency concerned shall institute formal condemnation proceedings. No Federal agency head shall intentionally make it necessary for an owner to institute legal proceedings to prove the fact of the taking of his real property.

(9) If the acquisition of only part of a property would leave its owner with an uneconomic remnant, the head of the Federal agency concerned shall offer to acquire the entire property.

BUILDINGS, STRUCTURES, AND IMPROVEMENTS

SEC. 302. (a) Notwithstanding any other provision of law, if the head of a Federal agency acquires any interest in real property in any State, he shall acquire at least an equal interest in all buildings, structures, or other improvements located upon the real property so acquired and which he requires to be removed from such real property or which he determines will be adversely affected by the use to which such real property will be put.

(b)(1) For the purpose of determining the just compensation to be paid for any building, structure, or other improvement required to be acquired by subsection (a) of this section, such building, structure, or other improvement shall be deemed to be a part of the real property to be acquired notwithstanding the right or obligation of a tenant, as against the owner of any other interest in the real property, to remove such building, structure, or improvement at the expiration of his term, and the fair market value which such building, structure, or improvement contributes to the fair market value of the real property to be acquired, or the fair market value of such building, structure, or improvement for removal from the real property, whichever is the greater, shall be paid to the tenant therefor.

(2) Payment under this subsection shall not result in duplication of any payments otherwise authorized by law. No such payment shall be made unless the owner of the land involved disclaims all interest in the improvements of the tenant. In consideration for any such payment, the tenant shall assign, transfer, and release to the United States all his right, title, and interest in and to such improvements. Nothing in this subsection shall be construed to deprive the tenant of any rights to reject payment under this subsection and to obtain payment for such property interests in accordance with applicable law, other than this subsection.

EXPENSES INCIDENTAL TO TRANSFER OF TITLE TO UNITED STATES

SEC. 303. The head of a Federal agency, as soon as practicable after the date of payment of the purchase price or the date of deposit in court of funds to satisfy the award of compensation in a condemnation proceeding to acquire real property, whichever is the earlier, shall reimburse the owner, to the extent the head of such agency deems fair and reasonable, for expenses he necessarily incurred for—

(1) recording fees, transfer taxes, and similar expenses incidental to conveying such real property to the United States;

(2) penalty costs for prepayment of any preexisting recorded mortgage entered into in good faith encumbering such real property; and

(3) the pro rata portion of real property taxes paid which are allocable to a period subsequent to the date of vesting title in the United States, or the effective date of possession of such real property by the United States, whichever is the earlier.

LITIGATION EXPENSES

SEC. 304. (a) The Federal court having jurisdiction of a proceeding instituted by a Federal agency to acquire real property by condemnation shall award the owner of any right, or title to, or interest in, such real property such sum as will in the opinion of the court reimburse such owner for his reasonable costs, disbursements, and expenses, including reasonable attorney, appraisal, and engineering fees, actually incurred because of the condemnation proceedings, if—

(1) the final judgment is that the Federal agency cannot acquire the real property by condemnation; or

(2) the proceeding is abandoned by the United States.

(b) Any award made pursuant to subsection (a) of this section shall be paid by the head of the Federal agency for whose benefit the condemnation proceedings was instituted.

(c) The court rendering a judgment for the plaintiff in a proceeding brought under section 1346(a)(2) or 1491 of title 28, United States Code, awarding compensation for the taking of property by a Federal agency, or the Attorney General effecting a settlement of any such proceeding, shall determine and award or allow to such plaintiff, as a part of such judgment or settlement, such sum as will in the opinion of the court or the Attorney General reimburse such plaintiff for his reasonable costs, disbursements, and expenses, including reasonable attorney, appraisal, and engineering fees, actually incurred because of such proceeding.

REQUIREMENTS FOR UNIFORM LAND ACQUISITION POLICIES; PAYMENTS OF EXPENSES INCIDENTAL TO TRANSFER OF REAL PROPERTY TO STATE; PAYMENT OF LITIGATION EXPENSES IN CERTAIN CASES

SEC. 305. Notwithstanding any other law, the head of a Federal agency shall not approve any program or project or any grant to, or contract or agreement with, a State agency under which Federal financial assistance will be available to pay all or part of the cost of any program or project which will result in the acquisition of real property on and after the effective date of this title, unless he receives satisfactory assurances from such State agency that—

(1) in acquiring real property it will be guided, to the greatest extent practicable under State law, by the land acquisition policies in section 301 and the provisions of section 302, and

(2) property owners will be paid or reimbursed for necessary expenses as specified in sections 303 and 304.

Source: U. S. Statutes at Large; 91st Congress, 2nd Session Volume 84.

Table 3. Residential Relocation Cost Figures for the Sample Area

Property Acquisition[1]:				$ 6,261,569
Borough location--907 houses @ $3676 = $3,335,000 (1.58)			= $5,269,300	
Outside the borough--				
Near town boundaries--75 houses @ $3676		= $275,625		
Outlying, no land--104 houses @ $2030		= $211,120		
Outlying, with land--21 houses @ $2090		= $ 43,880	= $ 992,269	
Moving and dislocation allowance ($396 average):	823 occupied dwelling units[2]			$ 325,908
Group quarters relocatees ($476 average):	57 group quarters relocatees[3]			$ 27,132
Relocation supplements:				$ 4,709,668
For new house ($6030 average):	741 owner-occupied units[3]			
For mortgage ($2538 average):	41 new owners[4]			
For rent ($1401 average):	41 rentals plus 57 group quarters = 98			
Relocation advisory assistance services (@ $347):	880 relocated dwelling units			$ 305,360
Other costs (@ $713)[5]:	1107 properties and dwelling units			$ 789,291
TOTAL				$12,418,928

1. Assessed market values X multiplier = Estimated Market Value 1974-75.
2. Estimated from telephone directory listings.
3. Estimated from U. S. Census of Population and Housing, 1970.
4. Assumes one-half of renters choose to purchase homes at relocation site.
5. Federal Housing Administration average closing costs plus maximum PennDOT allowance for professional fees (Table 7).

TITLE II—UNIFORM RELOCATION ASSISTANCE

DECLARATION OF POLICY

SEC. 201. The purpose of this title is to establish a uniform policy for the fair and equitable treatment of persons displaced as a result of Federal and federally assisted programs in order that such persons shall not suffer disproportionate injuries as a result of programs designed for the benefit of the public as a whole.

MOVING AND RELATED EXPENSES

SEC. 202. (a) Whenever the acquisition of real property for a program or project undertaken by a Federal agency in any State will result in the displacement of any person on or after the effective date of this Act, the head of such agency shall make a payment to any displaced person, upon proper application as approved by such agency head, for—

(1) actual reasonable expenses in moving himself, his family, business, farm operation, or other personal property;

(2) actual direct losses of tangible personal property as a result of moving or discontinuing a business or farm operation, but not to exceed an amount equal to the reasonable expenses that would have been required to relocate such property, as determined by the head of the agency; and

(3) actual reasonable expenses in searching for a replacement business or farm.

(b) Any displaced person eligible for payments under subsection (a) of this section who is displaced from a dwelling and who elects to accept the payments authorized by this subsection in lieu of the payments authorized by subsection (a) of this section may receive a moving expense allowance, determined according to a schedule established by the head of the Federal agency, not to exceed $300; and a dislocation allowance of $200.

(c) Any displaced person eligible for payments under subsection (a) of this section who is displaced from his place of business or from his farm operation and who elects to accept the payment authorized by this subsection in lieu of the payment authorized by subsection (a) of this section, may receive a fixed payment in an amount equal to the average annual net earnings of the business or farm operation, except that such payment shall be not less than $2,500 nor more than $10,000. In the case of a business no payment shall be made under this subsection unless the head of the Federal agency is satisfied that the business (1) cannot be relocated without a substantial loss of its existing patronage, and (2) is not a part of a commercial enterprise having at least one other establishment not being acquired by the United States, which is engaged in the same or similar business. For purposes of this subsection, the term "average annual net earnings" means one-half of any net earnings of the business or farm operation, before Federal, State, and local income taxes, during the two taxable years immediately preceding the taxable year in which such business or farm operation moves from the real property acquired for such project, or during such other period as the head of such agency determines to be more equitable for establishing such earnings, and includes any compensation paid by the business or farm operation to the owner, his spouse, or his dependents during such period.

Table 4, Continued

REPLACEMENT HOUSING FOR HOMEOWNER

SEC. 203. (a)(1) In addition to payments otherwise authorized by this title, the head of the Federal agency shall make an additional payment not in excess of $15,000 to any displaced person who is displaced from a dwelling actually owned and occupied by such displaced person for not less than one hundred and eighty days prior to the initiation of negotiations for the acquisition of the property. Such additional payment shall include the following elements:

(A) The amount, if any, which when added to the acquisition cost of the dwelling acquired by the Federal agency, equals the reasonable cost of a comparable replacement dwelling which is a decent, safe, and sanitary dwelling adequate to accommodate such displaced person, reasonably accessible to public services and places of employment and available on the private market. All determinations required to carry out this subparagraph shall be made in accordance with standards established by the head of the Federal agency making the additional payment.

(B) The amount, if any, which will compensate such displaced person for any increased interest costs which such person is required to pay for financing the acquisition of any such comparable replacement dwelling. Such amount shall be paid only if the dwelling acquired by the Federal agency was encumbered by a bona fide mortgage which was a valid lien on such dwelling for not less than one hundred and eighty days prior to the initiation of negotiations for the acquisition of such dwelling. Such amount shall be equal to the excess in the aggregate interest and other debt service costs of that amount of the principal of the mortgage on the replacement dwelling which is equal to the unpaid balance of the mortgage on the acquired dwelling, over the remainder term of the mortgage on the acquired dwelling, reduced to discounted present value. The discount rate shall be the prevailing interest rate paid on savings deposits by commercial banks in the general area in which the replacement dwelling is located.

(C) Reasonable expenses incurred by such displaced person for evidence of title, recording fees, and other closing costs incident to the purchase of the replacement dwelling, but not including prepaid expenses.

(2) The additional payment authorized by this subsection shall be made only to such a displaced person who purchases and occupies a replacement dwelling which is decent, safe, and sanitary not later than the end of the one year period beginning on the date on which he receives from the Federal agency final payment of all costs of the acquired dwelling, or on the date on which he moves from the acquired dwelling, whichever is the later date.

(b) The head of any Federal agency may, upon application by a mortgagee, insure any mortgage (including advances during construction) on a comparable replacement dwelling executed by a displaced person assisted under this section, which mortgage is eligible for insurance under any Federal law administered by such agency notwithstanding any requirements under such law relating to age, physical condition, or other personal characteristics of eligible mortgagors, and may make commitments for the insurance of such mortgage prior to the date of execution of the mortgage.

Table 4, Continued

REPLACEMENT HOUSING FOR TENANTS AND CERTAIN OTHERS

SEC. 204. In addition to amounts otherwise authorized by this title, the head of the Federal agency shall make a payment to or for any displaced person displaced from any dwelling not eligible to receive a payment under section 203 which dwelling was actually and lawfully occupied by such displaced person for not less than ninety days prior to the initiation of negotiations for acquisition of such dwelling. Such payment shall be either—

(1) the amount necessary to enable such displaced person to lease or rent for a period not to exceed four years, a decent, safe, and sanitary dwelling of standards adequate to accommodate such person in areas not generally less desirable in regard to public utilities and public and commercial facilities, and reasonably accessible to his place of employment, but not to exceed $4,000, or

(2) the amount necessary to enable such person to make a downpayment (including incidental expenses described in section 203(a)(1)(C)) on the purchase of a decent, safe, and sanitary dwelling of standards adequate to accommodate such person in areas not generally less desirable in regard to public utilities and public and commercial facilities, but not to exceed $4,000, except that if such amount exceeds $2,000, such person must equally match any such amount in excess of $2,000, in making the downpayment.

RELOCATION ASSISTANCE ADVISORY SERVICES

SEC. 205. (a) Whenever the acquisition of real property for a program or project undertaken by a Federal agency in any State will result in the displacement of any person on or after the effective date of this section, the head of such agency shall provide a relocation assistance advisory program for displaced persons which shall offer the services described in subsection (c) of this section. If such agency head determines that any person occupying property immediately adjacent to the real property acquired is caused substantial economic injury because of the acquisition, he may offer such person relocation advisory services under such program.

(b) Federal agencies administering programs which may be of assistance to displaced persons covered by this Act shall cooperate to the maximum extent feasible with the Federal or State agency causing the displacement to assure that such displaced persons receive the maximum assistance available to them.

(c) Each relocation assistance advisory program required by subsection (a) of this section shall include such measures, facilities, or services as may be necessary or appropriate in order to—

(1) determine the need, if any, of displaced persons, for relocation assistance;

(2) provide current and continuing information on the availability, prices, and rentals, of comparable decent, safe, and sanitary sales and rental housing, and of comparable commercial properties and locations for displaced businesses;

Table 4, Continued

(3) assure that, within a reasonable period of time, prior to displacement there will be available in areas not generally less desirable in regard to public utilities and public and commercial facilities and at rents or prices within the financial means of the families and individuals displaced, decent, safe, and sanitary dwellings, as defined by such Federal agency head, equal in number to the number of and available to such displaced persons who require such dwellings and reasonably accessible to their places of employment, except that the head of that Federal agency may prescribe by regulation situations when such assurances may be waived;

(4) assist a displaced person displaced from his business or farm operation in obtaining and becoming established in a suitable replacement location;

(5) supply information concerning Federal and State housing programs, disaster loan programs, and other Federal or State programs offering assistance to displaced persons; and

(6) provide other advisory services to displaced persons in order to minimize hardships to such persons in adjusting to relocation.

(d) The heads of Federal agencies shall coordinate relocation activities with project work, and other planned or proposed governmental actions in the community or nearby areas which may affect the carrying out of relocation assistance programs.

HOUSING REPLACEMENT BY FEDERAL AGENCY AS LAST RESORT

SEC. 206. (a) If a Federal project cannot proceed to actual construction because comparable replacement sale or rental housing is not available, and the head of the Federal agency determines that such housing cannot otherwise be made available he may take such action as is necessary or appropriate to provide such housing by use of funds authorized for such project.

(b) No person shall be required to move from his dwelling on or after the effective date of this title, on account of any Federal project, unless the Federal agency head is satisfied that replacement housing, in accordance with section 205(c)(3), is available to such person.

Source: U.S. Statutes at Large; 91st Congress, 2nd Session, 1970-1971; Volume 84.

Table 5. Relocation Assistance Guidelines of Pennsylvania Department of Transportation

I. Moving Expenses and Dislocation Allowance

OPTIONS

A displaced person may elect one of two payment options to cover his moving expenses:

OPTION A: PAYMENT BASED ON A FIXED SCHEDULE

A-1 Fixed Schedule for dwellings and unfurnished apartments.

A-2 Fixed Schedule for furnished living quarters.

A-3 Fixed Schedule for mobile homes.

OPTION B: REIMBURSEMENT OF ACTUAL REASONABLE EXPENSES INCURRED

DESCRIPTION OF OPTIONS

OPTION A: FIXED PAYMENT SCHEDULE ($300 maximum) (plus $200 Dislocation Allowance)

A-1 DWELLINGS AND UNFURNISHED APARTMENTS

The displaced occupant(s) of a dwelling or unfurnished apartment may receive a moving cost payment to a maximum of $300 based on the number of rooms occupied as follows:

1 room	$ 50.00
2 rooms	$ 90.00
3 rooms	$130.00
4 rooms	$170.00
5 rooms	$210.00
6 rooms	$240.00
7 rooms	$270.00
8 or more	$300.00

A-2 FURNISHED LIVING QUARTERS

The displaced occupant(s) of furnished living quarters may receive a moving cost payment to a maximum of $300 based on a schedule of $20 per occupied room.

A-3 MOBILE HOMES

The fixed moving cost payment to a maximum of $300 for the occupant(s) of a mobile home is based on the number of occupied square feet as follows:

Table 5, Continued

Up to 300 sq. ft.	$130.00
300 - 500 sq. ft.	$225.00
500 - 800 sq. ft.	$275.00
800 and over	$300.00

SPECIAL NOTE

In addition to the Fixed Moving Cost Payment, as described above, the displaced individual or family also receives a $200 Dislocation Allowance. This allowance is to compensate the relocatee for miscellaneous expenses incidental to moving.

OPTION B: ACTUAL COST MOVE

On an Actual Cost Move, moving costs will normally be reimbursed for up to the first 50 miles. The following items are reimburseable on a reasonable, incurred basis:

1. The cost of packing, transporting, and unpacking the relocatee's personal property. Note that two estimates prepared by licensed commercial moving companies must be submitted to PennDOT for review and approval prior to the move.

2. The cost of disconnecting and reconnecting certain equipment regarded as personal property.

3. The cost of traveling from the acquired property to the replacement property, but not to exceed ten cents per mile for a maximum of 50 miles. If commercial transportation is used, the actual costs incurred will be reimbursed if reasonable.

4. The loss of uninsurable personal property while being moved provided that the loss or damage was not caused by the negligence of the relocatee.

5. The cost of meals and temporary lodging if determined by PennDOT to be required because of unforeseen circumstances or practical necessities of the moving operation.

6. The cost of storing the relocatee's personal property for up to 12 months if approved by PennDOT.

Reimbursable costs are not limited to the above six items. Any reasonable cost necessary to move a relocatee and his personal belongings to a replacement dwelling will be approved by PennDOT.

All costs must be supported by invoices, receipted bills, or other evidence of expense incurred.

Table 5, Continued

II. Relocation Benefits for Residents

RELOCATION BENEFITS AVAILABLE TO AN
OWNER-OCCUPANT OF AT LEAST 180 DAYS

An owner-occupant in this category may elect to receive one of the following three Supplemental Housing Payment options:

OPTION A: Replacement Housing Supplement Payment to a maximum maximum of $15,000

OPTION B: Downpayment Supplement to a maximum of $4,000.

OPTION C: Rental Supplement to a maximum of $4,000.

In addition to one of the above three options, he may receive:

D. Moving Costs, and

E. Other Benefits

In order to receive a Replacement Housing Supplement Payment, the displaced person must meet the following eligibility requirements:

1. He must have owned and occupied his dwelling for at least 180 consecutive days immediately prior to receipt from PennDOT of the written Fair Market Value Offer (initiation of Negotiations) for the acquisition of his real property, in whole or in part.

2. His dwelling is acquired by PennDOT.

3. He has obtained legal ownership of a suitable replacement dwelling.

4. He occupies the replacement dwelling within one year after the date he moves from the acquired dwelling, or one year from the date he receives final payment for the acquired dwelling, whichever date is later.

5. He files a claim for payment within 18 months of the later of the two dates mentioned in number 4 above.

OPTION A: REPLACEMENT HOUSING SUPPLEMENT PAYMENT includes the following:

I. The additional cost, if any, necessary to purchase comparable replacement housing.

II. Actual reasonable closing costs incident to the purchase of a replacement property.

Table 5, Continued

III. Increased Mortgage Costs, if any.

The total reimbursable amount of items I, II, and III cannot exceed $15,000.

DEFINITION: The Replacement Housing Payment is the amount, if any, which, when added to the Fair Market Value of the acquired dwelling, equals the actual cost which the owner is required to pay for a decent, safe and sanitary dwelling, or the amount determined by PennDOT to be necessary to purchase a comparable dwelling, whichever is less.

I. It is recognized that a person who is displaced by a highway construction project may not be able to purchase a comparable replacement dwelling that is decent, safe and sanitary, and adequate to accommodate himself and his family for the same amount of money that was paid to him for his former home. Therefore, in order to spare the displaced person any undue financial burden, the Law directs that a Replacement Housing Supplemental Payment be made available to absorb any increased purchase cost.

II. In addition to the increased purchase cost, if any, of a comparable replacement dwelling, the Replacement Housing Supplement Payment provides for reimbursement of actual reasonable costs incurred by the displaced person incident to the purchase of the replacement dwelling. Such costs may include the following items if reasonable and normally paid by the buyer:

a. Legal, closing and related costs, including title search, preparing conveyance contracts, notary fees, surveys, preparing drawings or plats, and recording charges.

b. Lender, FHA or VA appraisal and application fees.

c. Certification of structural soundness when required by lender, FHA or VA.

d. Credit report.

e. Owner's title policy or abstract of title.

f. Escrow agent's fees

g. Sales or transfer taxes.

h. Purchaser points and/or an origination or loan service fee (not to exceed one percent) if such fees are normal to real estate transactions in the area.

The type of closing costs not included in this provision are prepaid expenses such as prepaid real estate taxes, property insurance, etc.

Table 5, Continued

III. Also included in the Replacement Housing Supplement Payment is the reimbursement to the displaced person of any Increased Interest Costs if the mortgage on the replacement dwelling bears a higher rate of interest than the mortgage interest rate on the acquired dwelling. To qualify for the increased interest costs, the acquired dwelling must have been encumbered by a bona fide mortgage which was a valid lien on such dwelling for not less than 180 days prior to the date of the Initiation of Negotiations for the acquisition of the dwelling.

COMMENTS

Remember that the total reimbursable amount of the above described Replacement Housing Supplement Payment cannot exceed $15,000. In order to receive a Replacement Housing Supplement Payment, the price paid by the relocatee for a replacement dwelling must exceed the Fair Market Value payment paid by PennDOT for the relocatee's former (State acquired) property.

If the relocatee purchases a replacement dwelling for an amount which is equal to or greater than the amount which PennDOT has determined to be the cost of a comparable replacement dwelling, the relocatee will receive the full amount of PennDOT's Replacement Housing Supplement Offer.

If the relocatee purchases a replacement dwelling for an amount which is less than the amount which PennDOT has determined to be the cost of a comparable replacement dwelling, the relocatee's Replacement Housing Supplement Payment will be adjusted downward accordingly.

Source: Pennsylvania Department of Transportation, Relocation Assistance Information, Bulletin 47, September 1974.

dislocation expenses ($396 average per unit) was used as a basis for estimation.

(2) Relocation allowances. Relocation regulations recognize that comparable housing may not be available to the relocatee at the same cost level as compensation received for his former property (owner occupant) or the same rent level (rental occupants). Thus Federal regulation and Commonwealth guidelines provide allowances to cover these contingencies. Property owners may receive up to $15,000 supplement required in purchasing a new home. Former rental occupants are eligible for down payment allowances to purchase a home. Relocatees moving to rental properties may receive rental supplements (Table 5). Relocation advisory services must also be provided (Table 6). Such services averaged $347 per unit relocated under Federal Highway Administration programs in 1974.

Table 7 summarizes the costs associated with residential relocation, including average 1974 costs in each category associated with Federal highway programs. Using these federal estimates allows an order-of-magnitude approximation, but clearly different values may pertain in specific locations. Table 3 derives the total residential property acquisition and relocation cost estimates for the sample area. These costs total $12,419,000. Note that relocation allowances may be considerably underestimated, should relocatees be forced to seek recently constructed housing at values much higher than the older housing from which they would be displaced. In addition, there is at least one historic building in the sample site which should be moved for preservation at an estimated cost of $15,000 (11).

Table 6. Relocation Advisory Services, PennDOT

The Relocation Advisor

It is the responsibility of the Relocation Advisor to ensure that each displaced individual and family is provided the opportunity to relocate to a replacement dwelling which is as good as or better than the dwelling from which he moved. He will also give all possible assistance to businesses, farm operations, and nonprofit organizations in their efforts to relocate. In addition, the Relocation Advisor will make sure that all claimants receive all the monetary benefits and services to which they are entitled.

At the time (or soon after) an owner receives the Fair Market Value offer to purchase his real property (Initiation of Negotiations), a Relocation Advisor will personally visit each owner or tenant who will be displaced for the purpose of explaining the Relocation Assistance Program. He will make available his phone number and address where he can be readily contacted for further advice and assistance.

Each relocatee is urged to work closely with the Relocation Advisor and to avail himself of all the services and benefits for which he is eligible. Each Relocation Advisor welcomes the opportunity to provide his personal assistance and interest.

Source: Pennsylvania Department of Transportation, Relocation Assistance Information, Bulletin 47, September 1974.

Table 7. Summary of Residential Relocation Costs

Acquisition: Fair market value of house and property.

Moving: Up to $300, 50 miles maximum (PennDOT).

Dislocation allowance: $200 (PennDOT).

(average for moving plus dislocation allowance, 1974, $396, FHA).

Relocation: Will pay up to $15,000 on new property. FHA average, $6,030.

1. Additional cost to purchase property.
2. Closing costs incidental to purchase of property.
3. Increased mortgage costs.

   Or, will pay up to $4000 on new mortage, FHA average, $2,538.

   Or, will pay up to $4000 on rent, FHA average, $1401.

Relocation advisory assistance services: FHA average, $347.

Other costs:

Closing costs--Any costs involved in transferring property to the government, FHA average, $213.

Pro-Rate share--The government's pro-rata share of taxes for the balance of the year (legal aspects concerning jurisdiction of dissolved municipalities are unclear, so that taxes remain uncalculable).

Penalty costs--On pre-payment of mortgage.

Professional fees--Up to $500 incurred in gaining professional advice relating to the acquisition of the property (PennDOT).

III. Relocation of Businesses and Nonprofit Organizations

PennDOT Bulletin 47 states that "The relocation benefits and eligibility requirements are similar for businesses, farms and nonprofit organizations. Therefore, reference will be made to "businesses" in a general sense, and will be assumed to include farms and nonprofit organizations unless otherwise specifically stated." (24).

The acquisition of business properties and subsequent relocation of the business are more involved and costly than similar costs in the residential sector. In addition to all the processes involved with moving a family, businesses require a more detailed and extensive search for a replacement site and can expect to lose customers as a result of the move. A nonprofit organization can expect to lose membership, persons, community and/or clientele served or affected by its activities. While most businesses survive a move, many do not. This results in an obvious hardship for the owner and his employees. It is also a strain on the community which loses tax revenues and jobs. This emphasizes the need for successful relocation which involves much planning and thought.

Estimates here are based on property assessment values in the sample area, coupled with estimated other relocation costs from recent Federal Highway Administrative experience. It must be emphasized that the following are order-of-magnitude estimates that must be used with caution.

A. Estimation of Business Property Values

No current property assessment data for suggesting actual market values of business properties in the sample area is available. Thus property value estimates here are based on a complete sample of all businesses and non-profit organizations listed in the telephone directory for the sample area.

Assessed market values of these properties were obtained from the Schuylkill County assessor's office. There was insufficient data (recent sale prices) to derive reliable factors for estimating real market values. Thus property value estimates in this category use the factor derived for residences in the borough vicinity, and must be used with great care. Estimated property values are listed in Tables 8 and 9 . Among tax-exempt properties are schools, churches, governmental buildings, community buildings, playgrounds, and open municipal land.

B. Estimation of Business and Non-profit Organizations' Relocation Expenses and Allowances

Tables 5 and 12 summarize the categories and levels of compensation associated with business relocation.

The Federal government under Title II of the Uniform Relocation Assistance Act of 1970, Section 202 (Table 4) will reimburse for either "moving and related expenses" <u>or</u> "in-lieu payment for moving expenses." "Moving and related expense" includes moving costs, tangible personal property losses and searching costs for a replacement site. "In-lieu payment for moving expenses" is the same as the business dislocation damages allowance. In Federal projects it is up to the businessman to decide which compensation he wishes to receive.

PennDOT will reimburse for <u>all</u> the above mentioned costs: moving costs, tangible personal property losses, search costs for a replacement site, <u>and</u> the business dislocation damages allowance. As the purpose of this study is to determing the most stringent compensation standards for the relocatee, estimates here use the more liberal PennDOT reimbursement rates.

The Federal Housing Administration average for "moving and related expenses" is $2688. The average for the "in-lieu payment for moving expenses"

Table 8. Estimated Business Relocation Cost Figures for the Sample Area

Acquisition: 52 businesses @ assessed market value = $421,145 X 1.37	$576,969
Moving costs and related expenses ($2688 average):	$139,776
Business dislocation damages allowance[1] ($5424 average):	$282,048
Relocation advisory assistance services ($347 average):	$ 18,044
Other costs ($713 average)	$ 37,076
TOTAL	$1,053,913

Note: 1. Estimated at Federal Highway Administration "in-lieu payment for moving expense" level in 1974.

Table 9. Estimated Nonprofit and Tax-Exempt Organization Relocation Cost Figures for the Sample Area

Acquisition (30 property units):	$833,447
Moving costs and related expenses ($2688 average)[1]:	$ 59,136
In-lieu payment for moving expense (business dislocation damages allowance, $5424 average)[1]:	$119,328
Relocation advisory assistance services ($347 average)[1]:	$ 7,634
Other costs ($713 average)[2]:	$ 21,390
TOTAL	$1,040,935

Notes: 1. Based on 22 property units with buildings.

2. Based on 30 property units.

or business dislocation damages allowance is $5424. The itemized costs are discussed separately under the specific headings (Table 10).

(1) Moving costs. Claims may be made as to the actual reasonable cost of the move. A displaced business is eligible to receive reimbursement for one move up to 50 miles. Should it be necessary to store personal property pending location of a suitable relocation site, this too is reimbursable for up to 12 months of storage. The maximum FHA reimbursement is $25,000 (20).

(2) Tangible personal property. Often there is property which cannot be moved without its value or utility substantially depreciating. Sometimes a new site for relocation is unavailable in which case there may be further loss of property. A displaced business may receive payment to cover the actual direct losses of tangible personal property. This also includes inventory in cases where the business cannot be relocated. PennDOT limits this to $10,000.

(3) Searching costs for a replacement site. One of the most important functions concerned with relocating a business is finding a suitable replacement site. PennDOT stipulates that a displaced business may be reimbursed for the actual reasonable costs incurred while searching for a replacement business site. While the search is limited to a 50-mile radius, the reimbursement may be as high as $500. This includes transportation, meals and lodging, fees of real estate agents or brokers, and payment for time spent in the search. The Federal Housing Administration average cost per business for this is $466.

(4) Business dislocation damages. Usually a business will have to close for the period of time it takes to move or find a new location. Further, it will take time for a clientel to be reestablished after the move.

Table 10. Relocation Benefits Available to Displaced Businesses, Farms, and Nonprofit Organizations

A business may be eligible to receive Relocation Benefits if the following requirements are met:

1. The business is in occupancy on the date that a written Fair Market Value Offer is presented by PennDOT (Initiation of Negotiations) for the purchase of the real property, in whole or in part.

2. The real property is subsequently acquired by PennDOT.

A displaced business may be entitled to these Relocation Benefits:

A. SEARCHING COSTS

A displaced business may be reimbursed for the actual reasonable costs incurred while searching for a replacement business site. Such reimbursement is normally limited to a maximum of $500. The area of search is normally limited to a radius of 50 miles. Eligible expenses include:

1. Transportation

2. Meals and lodging

3. Fees of real estate agents or brokers

4. Payment for reasonable time actually spent in search

All expenses claimed must be supported by receipted bills except payment for time which is based on the applicable hourly wage rate for the person(s) conducting the search to a maximum of $10 per hour. A certified statement of the time spent in search and applicable hourly wage rate(s) is required.

B. BUSINESS DISLOCATION DAMAGES

A displaced business may be eligible to receive Business Dislocation Damages which shall not be less than $2,500 nor more than $10,000 provided the following conditions apply:

1. The business cannot be relocated without a substantial loss of existing patronage as reflected by the average annual dollar volume of business for a two-year period; or the business cannot be relocated because there is no suitable replacement site available. A suitable replacement site is defined as one in the same general area, suitable for the type of business or operation involved, and within the financial means

Table 10, Continued

of the displaced operator.

In the case of a nonprofit organization, existing patronage means the membership, persons, community and/or clientele served or affected by its activities.

If the relocatee is a farm operator, PennDOT must determine that the entire farm operation has been discontinued or relocated from the original location. In the case of a partial taking, the property remaining after the acquisition must no longer be capable of supporting a farm operation having substantially the same economic production as determined by PennDOT during its appraisal process.

2. The displaced business is not part of a commercial enterprise which has one or more other establishments engaged in the same or a similar business, and such other establishment(s) is/are not also being acquired by PennDOT.

3. The displaced business contributes materially to the income of the owner.

Business Dislocation Damages are based on whichever one of the following two formulas is most beneficial to the relocatee:

1. Average Annual Net Earnings Formula

   The average annual net earnings before Federal, State, and local income taxes, as reflected by Income Tax Forms, for the two taxable years immediately preceding the taxable year in which the operation is displaced. Average annual net earnings include any compensation paid by the operator to the owner, his spouse, and his dependents during this two-year period.

2. Rent Formula

   The total of 40 times the actual monthly rental paid by the relocatee if he is a tenant; or the total of 40 times the monthly economic rent as determined by PennDOT if the relocatee is an owner-occupant.

C. TANGIBLE PERSONAL PROPERTY LOSSES

A displaced business may receive payment to cover the actual direct losses of tangible personal property which cannot be moved because:

1. A comparable site for relocation is unavailable.

Table 10, Continued

2. The personal property cannot be moved without substantially destroying or diminishing its value.

3. The personal property cannot be moved to the new site without substantially destroying or diminishing its utility.

Payment shall not exceed the greater of:

1. The reasonable expenses which would have been required to move the personal property; or

2. The value of the personal property in place.

ALTERNATIVE

As an alternative to the above-described method of determining the amount payable for the actual direct losses of tangible personal property, the displaced business may elect to receive an amount equal to 50% of the difference, if any, between:

1. The original cost of the personal property to the displaced business or the replacement cost of equivalent property at the time of sale, whichever is less, and

2. The net proceeds obtained by the relocatee from a commercially reasonable sale.

If this alternative is elected, the relocatee shall give PennDOT not less than 60 days notice in writing. The relocatee shall not, directly or indirectly, purchase any of the personal property at private sale, however, he may bid on it at public sale.

Inventory shall be paid for under this option only if the business is not relocated.

The maximum amount payable for personal property losses under this option shall not exceed $10,000.

D. MOVING COSTS

Claims for the costs of moving personal property from the acquired business site to the replacement business site must be filed on a form provided by PennDOT within 18 months from the date of the move.

Where the acquisition of a business causes the owner to vacate a dwelling or other building(s) not acquired by PennDOT, the costs of moving personal property from such vacated building(s) are eligible for reimbursement.

Table 10, Continued

Generally, the displaced business is eligible to receive reimbursement for the costs of only one move.

Moving costs payment checks are processed and mailed to the relocatee or his designated assignee after the move has been completed.

The following items cannot be claimed as Moving Costs:

1. Costs of moving real property.

2. Improvements to the replacement site except when required by law.

3. Modification of personal property to adapt it to the replacement site except when required by law.

OPTIONS

The displaced business may elect one of the two following methods to determine the amount of Moving Costs reimbursement:

OPTION ONE: ACTUAL REASONABLE MOVING COSTS

OPTION TWO: SELF-MOVE

DESCRIPTION OF OPTIONS

OPTION ONE: ACTUAL REASONABLE MOVING COSTS

Transportation charges under this option are normally reimbursable for up to the first 50 miles only. If it becomes necessary to store personal property pending location of a replacement site, storage charges not to exceed 12 months may be reimbursable.

At least two moving cost estimates from licensed, local, reputable moving companies regularly engaged in this type of move are required to be submitted to PennDOT for approval prior to the move. A close working relationship between the displaced business, the moving company, and PennDOT is necessary during the entire moving operation.

OPTION TWO: SELF-MOVE

The relocatee may wish to conduct a self-move. In this case the relocatee must prepare a certified inventory of the items to be actually moved. PennDOT, using the certified inventory as a basis, will then obtain moving cost estimates from two local, reputable movers regularly engaged in this type of move. After review and approval of the estimates, the

Table 10, Continued

relocatee will be offered a moving cost payment not to exceed the lower approved estimate.

In the event that moving cost estimates cannot be obtained, the displaced owner may be paid his actual, reasonable moving costs which must be supported by receipted bills or other evidence of expenses incurred.

When the cost to move a displaced business is expected to be less than $1,000, payment may be based on an estimate prepared by PennDOT and the relocatee.

Upon completion of a self-move, the owner of the relocated business shall certify in his claim for payment that the items listed were actually moved.

E. INCREASED INTEREST COSTS

Whenever the acquisition of a property results in the termination of an installment purchase contract, mortgage or other evidence of debt on the acquired property, thereby requiring the legal or equitable owner to enter into another installment purchase contract, mortgage or other evidence of debt on the property purchased for the same use as the acquired property; the owner shall be compensated for any increased interest and other debt service costs which he is required to pay in financing the acquisition of the replacement property.

F. OTHER BENEFITS

The additional benefits for which a displaced business may be eligible are discussed under "PAYMENTS AND BENEFITS" in Section Two.

Source: Pennsylvania Department of Transportation, Relocation Assistance Information Bulletin 47, September 1974.

A business is therefore allowed to claim dislocation damages to make up for the loss. These damages are, by Federal standards (PL 91-646, Title II), to be not less than $2500 nor more than $10,000. The Federal Housing Administration average cost is $5424.

The PennDOT rules are detailed in Table 11, and would in all likelihood generate higher compensation levels than the Federal Housing Administration "in lieu" payments used for estimation here.

(5) Relocation Advisory Assistance Services. These services must also be provided and are estimated at the Federal Highway Administration unit level of $347 (1974). Other costs related to business relocation are listed in Table 12.

Tables 8 and 9 summarize estimated relocations costs for businesses and nonprofit or tax-exempt organizations in the sample area. The total of these costs is estimated as $2,095,000.

IV. Acquisition of Other Property

In addition to the real property accounted for in the residential or business categories discussed above, some 1,222 acres of the sample site is held in large land holdings, primarily by mining companies. Much of this land is derelict, resulting from previous mining activities, and is assessed at a nominal $25 market value per acre by the Schuylkill County assessor. We have no basis for revising this assessment, and therefore use it without correction, for a total land value of approximately $31,000 in categories other than residential, commercial, nonprofit or tax-exempt, or railroad properties discussed below.

V. Relocation of Cemeteries

The relocation of cemeteries, for whatever reason, is likely to evoke emotional reaction related to social ties and moral or religious

Table 11. Business Dislocation Damages--Pennsylvania Department of Transportation

A displaced business may be eligible to receive Business Dislocation Damages which shall not be less than $2,500 nor more than $10,000 provided the following conditions apply:

1. The business cannot be relocated without a substantial loss of existing patronage as reflected by the average annual dollar volume of business for a two-year period; or the business cannot be relocated because there is no suitable replacement site available. A suitable replacement site is defined as one in the same general area, suitable for the type of business or operation involved, and within the financial means of the displaced operator.

   In the case of a nonprofit organization, existing patronage means the membership, persons, community and/or clientele served or affected by its activities.

   If the relocatee is a farm operator, PennDOT must determine that the entire farm operation has been discontinued or relocated from the original location. In the case of a partial taking, the property remaining after the acquisition must no longer be capable of supporting a farm operation having substantially the same economic production as determined by PennDOT during its appraisal process.

2. The displaced business is not part of a commercial enterprise which has one or more other establishments engages in the same or a similar business, and such other establishment(s) is/are not also being acquired by PennDOT.

3. The displaced business contributes materially to the income of the owner.

Business Dislocation Damages are based on whichever one of the following two formulas is most beneficial to the relocatee:

1. Average Annual Net Earnings Formula

   The average annual net earnings before Federal, State, and local income taxes, as reflected by Income Tax Forms, for the two taxable years immediately preceding the taxable year in which the operation is displaced. Average annual net earnings include any compensation paid by the operator to the owner, his spouse, and his dependents during this two-year period.

Table 11. Continued

2. Rent Formula

The total of 40 times the actual monthly rental paid by the relocatee if he is a tenant; or the total of 40 times the monthly economic rent as determined by PennDOT if the relocatee is an owner-occupant.

Source: Pennsylvania Department of Transportation, Relocation Assistance Information, Bulletin 47, September 1974.

Table 12. Summary of Business and Nonprofit Organization Relocation Costs

Acquisition: Fair market value of the real property.

Moving and related expenses: FHA average, $2688.

Moving costs and related expenses--Actual costs of one move up to 50 miles. Limit, @45,000.

Tangible personal property--The value of the property which cannot be moved, or what it would cost to move it. Limit $10,000.

Searching costs for a replacement property: $500 maximum (PennDOT) for an area of up to 50 miles. FHA average, $466.

In-lieu payment for moving expense: FHA average $5424.

Business dislocation damages--Not less than $2500 nor more than $10,000.

Relocation advisory assistance services: FHA average $347.

Other costs:

Closing costs--Any cost involved in transferring property to the government, FHA average $213.

Pro-rate share--The government's pro-rate share of taxes for the balance of the year (legal aspects concerning jurisdiction of dissolved town are unclear, so that taxes remain uncalculable).

Penalty costs--On prepayment of mortgage.

Professional fees--Up to $500 incurred in gaining professional advice relating to the acquisition of property (PennDOT).

convictions. In addition, an act approved in 1868 forbids the construction of a private road to a mining site if it passes through or over any graveyard or over any church edifice or property.* Wherever possible therefore, mining should not be planned in an area containing a cemetery.

The study area contains two cemeteries. To get a complete relocation cost for the town, attempt was made to cost the relocation of the two cemeteries. No attempt has been made, however, to quantify the emotional upset involved.

"Ordinarily, just compensation for the acquisition of an existing cemetery site will consist of furnishing a new site comparable to the old site, plus disinterment and reinterment of the bodies, and transferring monuments and other facilities from the old to the new site" (p. 7339 (16)). Few studies are available, but a cost figure of $150 per grave has been obtained from a cemetery removal operation in Denver, Colorado (23). The cost of removal and reinterment of 328 bodies was $36,000; that is, $150 per grave. This does not include the cost of a new site. The two cemeteries in the study area were assumed to each have 250 graves, giving a minimum cost of $75,000.

VI. Relocation of Transportation and Utility Networks

A. Introduction

Deep surface mining would necessitate either relocation, abandonment, or retirement of a number of service networks, including road and rail, sewage, water, gas, electricity, telephone and cable television. In general, where relocation is to take place, the amount of compensation paid to the owner would be the cost of relocating the facility. For example, the Corps of Engineers relocates all roads at their own expense, but pays the owner

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*Pennsylvania Statutes, Title 36, #2803. Approved 1868, April 13.

of utilities the full cost of relocating their facilities (1). In the case of highway projects, the state reimburses the entire cost of relocation if the utility is on privately-owned land; that is, lands in which utilities have a real property interest for the purpose of the distribution and/or transmission of service. The Federal law defines the term 'cost of relocation' as ". . . the entire amount paid by the utility properly attributable to such relocation after deducting therefrom any salvage value derived from the old facility" (p. 30, 21). Whenever a State highway project necessitates the occupation of the right of way of any public services company, the Department of Transportation, at the expense of the Commonwealth or county, must provide a substitute right of way on another favorable location. The Department must also enter into agreement with the public service company to contribute toward the expense of transfer or reconstruction of the facilities (25). The Department is also authorized to enter into agreements with any city borough, incorporated town, township or municipality authority for the sharing in the costs of any adjustments or relocation of water lines, gas lines or sewer facilities owned and operated as a public utility by any of the above (25).

If the network is to be abandoned or retired, there still exists the cost to society of the lost investment. However, compensation would be based on a depreciated value of the facilities:

> . . . generally speaking, no compensation is paid when a public improvement destroys the actual use of utility facilities, where none of the utility's property is actually taken. But where property belonging to the utility is is actually taken . . . payment is made for any interest in the land which the utility owns and for the cost of removal of the facilities. If the utility restores its facilities to stock, the State generally pays removal costs, and in the majority of cases deduct the salvage value therefrom. If the facilities are not returned to stock compensation is paid . . . based on the depreciated value of the facilities, salvage value, etc. (p. 58 (21).

For example, if the facility is not replaced, sacrificed life would be recognized as compensatable item if the facility was located on a private right of way and is calculated as follows:

$$\text{Sacrificed Life Charge} = \begin{matrix}\text{Original Cost}\\ \text{of Facility}\end{matrix} \times \frac{\text{Unused Life of Facility}}{\text{Total Life Expectancy}}$$

(For further details, see (25).) The Corps of Engineers pays the owner of the facilities compensation based on similar principles:

$$\text{Compensation} = \begin{matrix}\text{Original cost}\\ \text{of Facilities}\end{matrix} - \text{Depreciation} - \begin{matrix}\text{Salvage}\\ \text{Value}\end{matrix} + \begin{matrix}\text{Removal}\\ \text{Cost}\end{matrix}$$

As regards railroad abandonment or retirement, the Corps of Engineers also takes account of the income that would be lost per year by the railroad company. Based on the performance of the last five years, annual income is estimated, and compensation is then paid based on this, and the remaining useful life of the railroad (1).

Thus, whether the network is to be relocated or retired, compensation is paid to the owner of the facility. Where the network is to be abandoned, in general, compensation is based on a depreciated value obtained by expert appraisal. Some very rough estimates of depreciation are given below:

Telephone/Electricity Poles Useful life of 30 years (1, 4)

Water/Gas pipes (cast iron steel) Useful life of 100 years (1, 4)

In 30 years, then, telephone poles would have depreciated in value 100 percent, the annual rate of depreciation being 3 1/3 percent. Salvage value should also be included; for example, below are figures obtained from the Bureau of Accounts, Interstate Commerce Commission, based on the maximum amount rail companies are allowed to depreciate their assets for tax purposes.

	Useful life	Salvage Value (%)
Bridges	60 years	2-5
Signal Systems	35 years	5

The annual depreciation rate is calculated as follows:

$$\frac{100 - \text{salvage value } (\%)}{\text{Service Life}}$$

Thus, assuming a salvage value of 5 percent, the annual depreciation for bridges would be 1½ percent. In this study no attempt has been made to estimate depreciated values. (For a more detailed account of depreciation and appraisal methods see (25)).

B. Roads

Where Federal land acquisition is concerned, " . . . only nominal compensation is due for streets, highways, roads and alleys acquired by condemnation unless the streets must be replaced" (p. 34, (18); see also (16)). It is argued that the condemnee is in fact benefited by being relieved of the cost of maintaining the land as a thoroughfare. The value of the land itself is reflected in the value of the lots on either side and since this value must be paid upon condemnation, no extra payment is needed for the land constituting the streets. The same argument can be assumed to apply in acquisition due to mining.

Where replacement is necessary, however, the cost of relocation should be compensated. Costs of road construction (Table 13) have been obtained from the Department of Transportation (4). In order to obtain a cost figure for the study area, road distances--disaggregated by State Highways, Township or County roads, and City streets--were measured from power line maps published by the Pennsylvania Power and Light Company, and multiplied by the corresponding cost per linear foot (Table 14).

Whether the roads are to be abandoned or relocated, at least temporary diversion of traffic would be required. The increase in mileage represents a cost to society in the form of greater travel time and an increase in vehicle running costs. The increased mileage per car due to the diversion was measured from the topographic maps. The running cost per mile of 15¢ is based on the Federal Income Tax deduction allowed for car expenses.

Table 13. Road Relocation

State Road		
	Assume:	2 12-foot lanes 10 foot stabilized shoulder
Cost:		$600,000/mile, $113.6/linear foot
City Streets		
	Assume:	36-foot wide pavement 26-foot sidewalks (including curb and gutter) (road installed after town laid, therefore very little earth moving involved)
	Cost:	$500,000/mile, $94.7/linear foot
Township Roads		
	Assume:	Secondary township road - no sidewalks 18-foot wide pavement Fairly rough terrain, therefore much earth moving
	Cost:	$300,000/mile, $56.8/linear foot

Source: (4)

Table 14. Road Values in the Study Area

State Road, 25043.8 ft. @ $114/LF	$2,855,000
City Streets, 39336.8 ft. @ $95/LF	$3,737,000
Township Roads, 26,280.7 ft. @ $57/LF	$1,498,000
Total	$8,090,000

Traffic volumes through the study area were obtained from a traffic flow map for 1972 (14), and the cost to society of diversion that would be caused by mining in the study area was calculated as follows (Table 14):

$$\text{Cost of Diversion} = \text{Increased Mileage} \times (\text{Volume of traffic/day} \times \frac{50}{100}) \times \text{Cost/Mile}$$

The average percentage of bypassable traffic in areas of population less than 5000 has been estimated at 50 percent; that is, the destination of 50 percent of the traffic would be the sample area borough, and thus if the town were relocated, only 50 percent of the volume shown on the map would need to be diverted. Diversion costs were estimated for two routes, one running northwest and the other due west through the sample area (a and b in Table 15 ; see Figure 7 in Report SR-104, Exhibits 1&2). The figure obtained above is a cost per day. The present value of this diversion over a 45-year life of the mine (annual diversion cost of $520,125 discounted at eight percent) is $6.3 million. Although we do not calculate this cost as part of relocation expenses chargeable to mining (simply because it is unclear to whom it would be paid), it is important to note that diversion can be a substantial social cost, particularly if heavily travelled routes are involved.

Time lost due to diversion is more difficult to quantify. One suggested surrogate measure is to use minimum hourly wage rates. If average rural speed is assumed to be 50 m.p.h., every 50 vehicle-mile increase could be costed using the hourly rate. No attempt was made to do this for the study area.

C. Railroads

Where relocation is required the cost of replacement should be compensated. Relocation costs/mile, for single and dual track (Table 16), have been obtained from Reading Rail Company, Pennsylvania (8), and Penn Central (7). For the study area, rail distances were measured from

Table 15. Costs of Highway Diversion

$$\text{Cost of Diversion } (x) = \begin{matrix}\text{Increased}\\ \text{mileage}\end{matrix} \text{ X (Volume of traffic/day X } \frac{50}{100} \text{ X Cost/Mile}$$

(a) $x = 2.5 \text{ X } 1500 \text{ X } 15¢$

$= \$562.5$

(b) $x = 2.5 \text{ X } 2300 \text{ X } 15¢$

$= \$862.5$

Total Cost of Diversion (daily)

(based on increased running cost) = $1425.00

(annual) = $520,125.00

Table 16. Railroad Trackage Cost Estimates

Cost per Linear Foot	Conditions	Source
$40/LF	Subgrade already prepared	(8)
$189/LF[1]	Single track plus signal system	(7)
$340/LF[1]	Dual track plus two-way Signal System	(7)

Note: 1. Used in study area calculation.

Pennsylvania Power and Light maps, and multiplied by the corresponding cost per mile (Table 17), to evaluate the cost of duplicating such facilities elsewhere. In addition a figure of $25 per acre was used for the value of the land owned by the rail company, based on the value of open land in the study area (obtained from County assessment records). The proposed relocation of the railroad, in the present study, was to be within the mining site, and the initial earthmoving to create a railroad bench would be carried out by the mining company. A cost figure of $8,649,000 has been calculated(see Table 7, Report SR-103,Summary Report). We assumed the compensation paid to the rail company would be sufficient, even taking account of depreciation, to construct rail facilities on the prepared bench.

Other costs of relocation, such as environmental impacts in the area of relocation (19), could also be considered. Air and noise pollution levels would increase during both the construction and operation phases of the line. Vegetation would be destroyed owing to clearing along the right of way and wildlife would therefore be displaced or lost in the immediate areas. Soil erosion, sediment and a possible alteration of water supply and quantity could also be a problem if not strictly controlled. However, in the study area, the railway would be relocated within the mining site, and the above effects have not been taken into account.

Whether the rail is abandoned or relocated, either diversion of rail traffic or change of mode of transportation would be required, at least temporarily (19). As with road traffic increased mileage costs, consisting of time and running costs, could be calculated in the case of diversion. Where change of mode of transportation is concerned, it has been estimated that for freight, truck transport would use double the amount of fuel for the same size cargo, while for passenger transport, private

Table 17. Railroad Relocation Costs in the Study Area

Right of Way	88 acres	@	$25/acre	+	$2200	(Based on value of open land in study area obtained from tax assessment maps)
Railroad	(18,400 Linear feet of single; 30,059 Linear feet of double track)				$13,697,800	
			Total		$13,700,000	

cars would use 10 times more fuel per passenger, for intercity travel. Such costs could, therefore, be quantified. Finally, in the case of all diversion, increased noise levels would occur on the diversion routes owing to the greater volume of traffic. However, no attempt has been made to quantify the above in the study area. While the new rail is being constructed, the old line would be left in place and no diversion would be required.

D. Sewage Systems

At present, there is no treatment of sewage in the sample area, and this is discharged into Mahanoy Creek. The North Schuylkill County Wastewater Authority has adopted a plan whereby wastewater from areas in Schuylkill County, including the sample area would involve the construction of a completely new sewer system, consisting of 24,450 feet of 8" sewer, at a cost of $839,500 (13).

Although this system is not yet in existence, we have used this figure in our cost evaluation of the sample site, based on an assumption that a typical town of approximately 2,500 would often have an equivalent value sewage facility.

After sewage treatment facilities have been completed, the severity of acid mine drainage pollution in the streams may increase due to the removal of the neutralizing characteristics of the untreated sewage. No attempt has been made to quantify the extra treatment that would consequently be needed.

E. Water Supply Systems

The estimated costs of supplying a town of approximately 3000 people with water has been obtained from the DER (10). The following assumptions were made: the existence of a surface water supply to include fire fighting; treatment at \$60-\$65 per capita; a distribution network at \$8 per linear foot in the rural areas, and \$15 per linear foot in the town, the pipes being laid approximately four feet deep. The water pipeline network within the town was assumed to have a similar footage to the sewage system mentioned above (24,450). For the rural areas, we measured along the major roads to the outlying houses, obtaining a figure of 2½ miles or 13,200 feet of pipe. Thus:

Rural areas:	13,200 ft. X \$8/LF.	= \$105,600
Urban areas:	24,450 ft. X \$15/LF.	= \$366,750
	Subtotal for study area	= \$472,350
Treatment:	3000 X \$65	= \$195,000
	Total for study area	= \$667,350

(\$700,000 used in final cost evaluation)

F. Electricity

An estimate of the cost of complete duplication of existing Girardville service facilities at a new location was obtained from Pennsylvania Power and Light Company. This would include 302 poles, 813 overhead service drops, 92 transformers, 2.67 miles of 3 Phase 12kv circuit, 0.40 miles of 2 Phase 12kv circuit, and 2.06 miles of 1 Phase 7.2kv circuit. The cost would be \$315,900 at \$61,600 per mile of primary circuit. This cost figure is for service facilities within the Girardville borough line. Using the above figure of \$61,600 per mile, the cost of relocating facilities outside the town was calculated as \$331,402, assuming 2½ miles of primary circuit, measured along the major roads to the rural houses.

G. Telephone

To evaluate the cost of duplicating the telephone facilities in the study area, (Table 18), a figure of $500 per phone was used, the number of phones (1082), being obtained from the sample area telephone book. This figure is the total investment expended per subscriber, and includes such items as equipment and installation (11).

H. Cable Television

It was assumed that the footage of cable television would be 80 percent of the power line footage obtained from the PP&L data. This is a very rough estimate obtained from Centre Video, State College. An estimated cost for overhead cable is $1.40 per linear foot, with an installation fee per home of $15 (2). Virtually all homes in Girardville have cable television, and the cost was calculated as follows:

Urban area:

21669 feet of cable X $1.40 = $30,336

800 (no. of homes) X $15.00 = $12,000

Total for urban area = $42,336

For rural areas, cable footage was estimated by measuring along the roads to major areas of rural housing. The number of houses in the study area outside of Girardville is 200 (estimated from the topographic sheet). Thus for the rural areas:

13,000 feet of cable X $1.40 = $18,200

200 homes X $15.00 = $ 3,000

Total for rural area = $21,200

Total for study area = $63,536

Table 18. Summary of Network Relocation Costs[1] or Compensation

Railroads	$13,700,000
Streets, roads, highways	$ 8,090,000
Electric system	$ 648,000
Sewage system	$ 840,000
Telephone system	$ 541,000
Cable television	$ 64,000
Water system	$ 700,000
Total for study area	$24,583,000

Note: 1. Does not incorporate depreciation or salvage values. See Text.

I. Natural Gas and Petroleum Pipelines

Maps obtained from the Pennsylvania Gas and Water Company show that no major gas lines exist in the study area. However, the following costs of residential natural gas supply systems have been obtained from Columbia Gas Inc., State College, for reference purposes (3):

Main line = $10 per linear foot

Lines into houses = $4.5 per linear foot

Regulator station = $5,000 to $10,000 depending on installation, size and volume of gas.

J. Stream Diversion

To prevent water from entering the mining area, and coming into contact with pollution-forming materials, a stream in the sample area would have to be diverted at a cost of $46,540,000. Such costs could be considerably greater for a major stream or navigable inland waterway.

K. Summary

A summary of the above cost figures can be found in Table 18. Because depreciation and salvage are not accounted for in the calculations, these represent a high estimate of the amount of compensation that would have to be paid in the event that the existing facilities in the sample area would have to be duplicated elsewhere.

VII. Summary

Table 19 includes the major categories of compensation estimated to be required for acquisition and relocation of existing land uses in the sample area. Clearly, these costs would be minimized in areas with less development, and could be considerably higher in more developed areas. These values are estimates made in the absence of professional evaluation.

Table 19. Major Categories of Compensation Required for Acquisition and Relocation

Preliminary survey ($15/acre)		$55,000[1]
Network Relocation:		
	Streets, Roads, Highways	8,090,000
	Railroad	13,700,000
	Electric Utility	648,000
	Sewage system	840,000
	Telephone	541,000
	Cable Television	64,000
	Water system	700,000
Acquisition and Relocation of Real Property:		
	Private residences (1107 residences, 880 dwelling units, historical house)	12,434,000
52	Businesses	1,054,000
30	Nonprofit and Tax-Exempt Organizations	1,041,000
2	Cemeteries	75,000
	Other land (1222 acres)	31,000
	TOTAL	$39,273,000

Note: 1. Based on cost of a Mine Drainage Survey of Mahanoy Creek watershed. (SL-197). Department of Environmental Resources (Harrisburg, Pennsylvania) Bond Issue Report for Period Ending March 1974, (Prepared by Resources Management).

and arbitration, and may differ on this account from real values pertinent to a specific location decision. Finally, these values are derived using guidelines for public projects. There can be no guarantee that lesser, nor more stringent guidelines, for relocation in conjunction with proposed mining, would not alter costs significantly.

VIII. Conclusion

The relocation costs estimated here ($39,273,000) amortized over the life of the hypothetical mine (45 years, Exhibit 1) would incur annual capital recovery charges, depending on respective rates of interest, from $3,243,557 to $5,901,946 (Table 20). Such costs, spread over approximately 3 million tons of coal produced per year, would add from $1.08 to $1.97 per ton sold, or from $0.043 to$0.077 per million BTU. These costs have been used in calculating estimated prices of coal in the summary report, but do not include return on capital. The additional costs in providing the railroad bench and stream bed are also included in Table 20, with estimated capital recovery increments in coal cost. The maximum capital recovery increment by relocation is estimated as $4.73 per ton or $0.186 per million BTU.

Table 21 summarizes coal prices including relocation costs taking both capital recovery and return on investment into account. Here we assume a 30% reject level and two inflation levels (0 and 6 percent), and have calculated prices based on a 15 percent return on investments as well as 15 percent cost of capital. Lower coal prices would occur should lower capital recovery costs (Table 21) or lower return on investment prove viable. At the 30% reject level, overall relocation costs would add approximately $5.14 per ton of coal produced annually (including capital recovery increments and return on investments) for an overall cost of coal of $39.40 at 1974-75 price levels.

Table 20. Relocation Costs and Coal Price Increments

Relocation Assumption	Cost of Capital[1] (%)	Annual Charges[2] (%)	Charges Per Ton[3] ($)	Charges Per Million BTU[4] ($)
1. Relocate Surface Land Uses	8	3,243,557	1.081	0.043
(Table 19)	10	3,981,889	1.327	0.052
$39,273,000	15	5,901,946	1.967	0.077
2. Provide Bench for Railroad	8	714,320	0.238	0.009
Relocation	10	876,922	0.292	0.012
$8,649,000	15	1,299,772	0.433	0.017
3. Provide Relocated Stream	8	3,843,739	1.281	0.050
Channel	10	4,718,691	1.573	0.062
$46,540,000	15	6,994,031	2.331	0.092
4. Total Charges	8	7,801,617	2.600	0.092
(1 + 2 + 3)	10	9,577,502	3.192	0.102
$94,462,000	15	14,195,749	4.731	0.126

Notes:
1. These levels provide a variety of capital costs to correspond to varying assumptions of private capital and/or government participation in the relocation process.
2. Capital ammortized over the 45-year life-of-mine. No return or investment, no inflation factors included.
3. Assumes 3 million tons per year.
4. Assumes 12,695 BTU per pound ($25.39 + 10^6$ BTU/ton).

Table 21. Costs of Coal with Relocation Alternatives[1]

Inflation level (%)	Cost of Coal ($)		Cost with Town Relocation ($)		Cost with Railroad Relocation ($)		Cost with River Relocation ($)		Cost with all Relocation ($)	
	Per Ton	Per 10^6 BTU	Per Ton	Per 10^6 BTU	Per Ton	Per 10^6 BTU	Per Ton	Per 10^6 BTU	Per Ton	Per 10^6 BTU
0	34.26	1.349	36.33	1.431	34.93	1.376	36.66	1.444	39.40	1.552
6	36.67	1.444	38.74	1.526	37.34	1.471	39.07	1.539	41.81	1.647

Note: 1. Assumes 15% Cost of Capital, 15% Return on Investment, 3 million tons per year, 12,695 BTU/pound (25.39 + 10^6 BTU/ton), 30% Reject.

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SR-95	Simulation of Quantity and Quality Control in Mining Ventilation	February 25, 1973
SR-96	The Utilization of Incinerated Anthracite Mine Refuse as an Aggregate in Bituminous Mixes for Surfacing Highways	April 1, 1973
SR-97	Feasibility Study of the Vertical Transport of Coal by Pipeline	September 30, 1973
SR-98	Further Studies in the Treatment of Coal Mine Drainage by Bio-chemical Iron Oxidation and Lime-stone Neutralization	February 28, 1974
SR-99	Analysis of Leakage and Friction Factors in Coal Mine Ventilation Systems	April 1, 1974
SR-100	Hydrogeological Influences in Preventive Control of Mine Drain-age from Deep Coal Mining	May 1, 1974
SR-101	Effect of Mulches and Amendments on the Survival and Growth of Vegetation Planted on Anthracite Processing Wastes	September 1, 1974
SR-102	A Computer Simulation Model for Coal Preparation Plant Design and Control	February 1, 1976