

Appendix G

Pipeline Expansions

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Expansion of the interstate pipeline grid has slowed somewhat in recent years. However, several new projects are planned to remove some system bottlenecks and move low-cost supplies located in the Central United States and Western Canada to markets in the U.S. Midwest and Northeast. Currently, the capability to do so is limited. The price differentials between supplies sold at the centers in West Texas and those in East Texas and the Henry Hub were often quite significant during the 1995–96 heating season, far exceeding the cost of transportation alone—if transport was available. Several proposed new pipelines and expansions to a number of existing systems could potentially increase the volume of business transacted at several market centers located in the Central United States and Canada.

As of September 30, 1996, the Energy Information Administration was tracking approximately 88 planned pipeline expansions and new pipeline projects at various stages of development in the United States, Canada, and Mexico (Table G1). If all U.S. projects were completed, the amount of new capacity would add 17,043 million cubic feet of daily deliverability on the national network (one project is entirely in Mexico and four entirely in Canada).¹³¹ Of the total projects, 19 are planned for completion in 1996, 40 in 1997, 21 in 1998, 7 in 1999, and 1 in the year 2000. Thirty of the projects call for development of new pipeline systems or new facilities at international border points.

The least amount of new construction is planned in the Western Region, 95 million cubic feet (MMcf) per day. This is not surprising since the region now is experiencing an excess of interstate capacity. Between 1990 and 1995, interstate capacity within and into the region increased by 58 percent, from 16,545 to 26,088 MMcf per day, more than any other region. The Northeast has the next lowest amount of planned pipeline expansions, 2,310 MMcf per day, but it has the largest number of proposed new projects (26). Proposed capacity additions in the Southeast Region for the most part are geared toward improving specific services to customers in North and South Carolina, although two major projects are designed to increase regional access to deep water production in the Gulf of Mexico by as much as 2 billion cubic feet per day by 1999.

This appendix examines the nature and type of proposed pipeline projects announced or approved for construction during the next several years in the United States. It also includes those projects in Canada and Mexico that tie-in with U.S. markets or projects.

Regional Developments

Gulf of Mexico

Deep Water Access

One of the more significant developments of the past year has been the increased attention to development of gas resources in deeper waters in the Gulf of Mexico, off Louisiana and Mississippi. Since the beginning of 1996, six new pipelines, representing more than 4,400 MMcf per day (not including gathering lines), have been proposed to reach into the deep water area of the Gulf to tap the several new production sources being developed there, notably the Ship Shoal, Green Canyon, Destin Corridor, and Mississippi Canyon areas of the Gulf. Companies such as Marathon Oil, Shell Oil, and Texaco are represented (Figure G1). Several additional projects, representing about 375 MMcf per day, also are being developed in the Gulf by Stingray Pipeline Company and Centana Energy Corporation to increase access to production closer to shore in the Main Pass and Vermillion Block areas.

Southwest

Development of offshore and deep water pipeline-related projects represent 70 percent of the 3,954 MMcf per day planned additions in the Southwest Region. Several of the remaining projects are also significant, because they will increase access to supplies from the San Juan Basin of New Mexico and direct them eastward toward West Texas market centers.

Southern Colorado and the San Juan Basin Area of Northern New Mexico

The amount of pipeline capacity available to move gas from the San Juan Basin area eastward is quite limited. Further

¹³¹ However, 118 million cubic feet of the Transcanada Pipeline Expansion Project's 286 million cubic feet of daily deliverability represents planned increases to export capability.

Table G1. Major Pipeline Construction Projects Planned or Announced for Development, by Terminating Region and Planned In-Service Year, 1996-2000

Year	Pipeline/Project Name	Map Key	FERC Docket Number	Status As of 9-30-96 ¹	New or Expansion	Began in Region ²	State Begin	State End	Miles	Cost Estimate (million \$)	Added Capacity (MMcf/d)
Canada											
1996	ANR Link	A1	CP93-564	Approved	New	Midwest	MI	ON	12	15	150
1996	Great Lakes St Clair Loop	A2	CP96-26	Approved	Expn	Midwest	MI	ON	NA	4	50
1998	TransCanada System	A3	N/A	Approved	Expn	Canada	SK	QU	128	900	286
1998	Palliser Pipeline	A4	NA	Announced	New	Canada	AB	AB	590	219	1,000
1998	Foothills Eastern Expn	A5	NA	Announced	Expn	Canada	SK	SK	0	0	700
1999	Sable Transcanadian	A6	NA	Pending	New	Canada	NS	QU	128	899	400
Total New Capacity											2,586
Central											
1996	NGPL Amarillo Upgrade	B1	CP94-577	Approved	Expn	Southwest	OK	NE	14	33	-25
1996	CIG Piscesance Lateral	B2	CP95-106	Pending	New	Central	CO	CO	NA	9	37
1996	KN Interstate Casper Loop	B3	CP95-113	Approved	Expn	Central	WY	WY	52	15	48
1996	Mid-Continent Hub Link	B4	NA	Announced	New	Central	KS	KS	9	10	100
1996	Viking Northern Looping	B5	CP96-32	Pending	Expn	Canada	CN	WI	14	8	194
1996	Williams Springfield Expn	B6	CP95-700	Approved	Expn	Central	MO	MO	28	14	23
1996	CIG Wind River Lateral Expn	B7	CP96-289	Approved	Expn	Central	WY	WY	NA	11	72
1997	Trailblazer Eastward Expn	B8	NA	Approved	Expn	Central	CO	NE	445	NA	105
1997	Wyoming Interstate Eastward	B9	CP96-288	Approved	Expn	Central	WY	CO	NA	40	192
1997	Williams Gas WY-KS Expn	B10	NA	Planning	Expn	Central	WY	KS	NA	NA	30
1997	Williams Gas KS-MO Expn	B11	NA	Planning	Expn	Central	KS	MO	NA	NA	15
1997	KN Interstate Pony Express	B12	CP96-477	Pending	New	Central	WY	MO	850	154	255
1998	Altamont Pipeline	B13	CP90-1372	Approved	New	Canada	CN	WY	620	139	737
1998	Northern Border Monchy Expn	B14	CP95-194	Approved	Expn	Canada	MT	IA	243	797	700
1998	Northern Border Harper Expn	B15	CP95-194	Approved	Expn	Central	IA	IA	142	NA	962
Total New Capacity											3,444
Midwest											
1996	Great Lakes PLLooping I	C2	CP95-375	Approved	Expn	Midwest	MI	MI	14	17	5
1996	Great Lakes PI Looping II	C3	CP96-297	Pending	Expn	Midwest	MI	MI	25	44	0
1996	Northern Natural Zone EF	C4	CP96-57	Approved	Expn	Midwest	MN	WI	30	19	46
1997	ANR Joliet Project	C5	NA	Announced	Expn	Central	IA	IL	NA	NA	660
1997	ANR Michigan Leg Expn	C9	CP96-641	Pending	Expn	Central	IL	MI	120	19	135
1997	TransCanada Import Expn	C10	N/A	Approved	Expn	Canada	CN	MN	NA	NA	56
1998	NGPL Amatillo Expn	C6	CP96-27	Approved	Expn	Central	IA	IL	85	85	345
1998	Northern Border Manhattan	C7	CP95-194	Approved	New	Central	IA	IL	200	NA	684
1998	Great Lakes System Wide Expn	C2	CP95-647	Pending	Expn	Central	CN	MI	200	149	126
1999	Alliance Project	C8	NA	Planning	New	Canada	CN	IL	1864	NA	1,200
Total New Capacity											3,257
Northeast											
1996	Texas Eastern Flex-X Oxford	D1	CP95-74	Pending	Expn	Northeast	PA	PA	2	8	31
1996	Texas Eastern Flex-X Philly Lat	D2	CP95-76	Approved	Expn	Northeast	PA	PA	24	8	12
1996	Texas Eastern ITP Phase I	D3	CP92-184	Approved	Expn	Midwest	OH	NJ	NA	233	25
1997	Columbia Gas Market Expn	D4	CP96-213	Pending	Expn	Northeast	PA	VA	379	64	232
1997	CNG Seasonal Service Expn	D5	CP96-492	Pending	Expn	Northeast	WV	PA	16	0	100
1997	CNG PL-1 Phase I	D6	CP96-492	Pending	Expn	Northeast	PA	VA	NA	NA	15
1997	CNG Woodhull/Avoca Line	D7	CP96-493	Pending	New	Northeast	NY	NY	16	0	100
1997	Iroquois Import Expn	D15	CP96-687	Pending	Expn	Northeast	NY	NY	200	NA	35
1997	Maritimes & Northeast Phase I	D8	CP96-178	Approved	New	Northeast	MA	ME	64	82	60
1997	National Fuel Niagara Expn	D12	CP96-671	Pending	Expn	Northeast	NY	PA	138	11	48
1997	Transco Seaboard Expn	D9	CP96-545	Pending	Expn	Northeast	PA	NY	36	118	115
1997	TransCanada Import (Iroquois)	D15	N/A	Pending	Expn	Canada	CN	NY	NA	NA	24
1997	TransCanada Import (Chippawa)	D12	N/A	Pending	Expn	Canada	CN	NY	NA	NA	48
1997	TransCanada Import (Niagara)	C12	N/A	Pending	Expn	Canada	CN	NY	NA	NA	39
1997	Texas Eastern Winternet I	D10	CP96-606	Pending	Expn	Northeast	PA	PA	NA	NA	20
1997	Columbia Gas WV Expn	D11	CP95-217	Approved	Expn	Northeast	WV	WV	18	17	28
1998	Columbia Gas Market Expn II	D4	CP96-213	Pending	Expn	Northeast	PA	VA	379	64	275
1998	Tenneco Mid-Atlantic	D6	NA	Announced	New	Northeast	WV	PA	NA	NA	335
1998	CNG PL-1 Phase II	D12	CP96-492	Pending	Expn	Northeast	PA	VA	NA	NA	25
1998	Portland Pipeline	D13	CP95-52	Approved	New	Canada	CN	ME	200	260	250
1998	Tenneco/DOMAC	D14	CP96-164	Pending	New	Northeast	MA	MA	8	26	55
1998	Texas Eastern Winternet II	D10	NA	Pending	Expn	Northeast	PA	PA	NA	NA	20
1999	CNG PL-1 Phase III	D6	CP96-492	Pending	Expn	Northeast	PA	VA	NA	NA	25
1999	Maritimes & Northeast Phase II	D15	CP96-178	Pending	New	Canada	CN	MA	386	404	440
1999	Texas Eastern Winternet III	D10	CP96-606	Pending	Expn	Northeast	PA	PA	NA	NA	12
2000	Texas Eastern Winternet IV	D10	CP96-606	Pending	Expn	Northeast	PA	PA	NA	NA	12
Total New Capacity											2,310

Table G1. Major Pipeline Construction Projects Planned or Announced for Development, by Terminating Region and Planned In-Service Year, 1996-2000 (Continued)

Year	Pipeline/Project Name	Map Key	FERC Docket Number	Status As of 9-30-96 ¹	New or Expansion	Began in Region ²	State Begin	State End	Miles	Cost Estimate (million \$)	Added Capacity (MMcf/d)
Southeast											
1997	SONAT Zone 3 AL	E1	CP96-153	Approved	Expn	Southeast	AL	AL	119	53	76
1997	SONAT Zone 3 GA-SC-TN	E2	CP96-541	Pending	Expn	Southeast	GA	SC	27	36	46
1997	Transco Sunbelt Expn	E3	CP96-16	Pending	Expn	<u>Southwest</u>	LA	SC	NA	85	148
1997	East Tennessee System Wide	E8	CP96-696	Pending	Expn	<u>Southeast</u>	TN	TN	NA	13	32
1998	Cardinal Pipeline	E4	N/A	Announced	Expn	Southeast	NC	NC	82	97	140
1998	Florida Gas Phase IV	E5	N/A	NA	Expn	Southeast	AL	FL	NA	32	37
1998	Transco Southeast Expn	E6	CP94-109	Approved	Expn	Southeast	AL	NC	130	NA	55
1998	Transco Mobile Bay Expn	E7	NA	Announced	Expn	Offshore	GM	AL	NA	198	1,000
1999	Destin Corridor Offshore	E9	CP96-655	Pending	New	Offshore	GM	MS	210	294	1,000
										Total New Capacity	2,531
Southwest											
1996	Midcon Corp.	F1	CP96-140	Announced	New	Southwest	TX	TX	68	17	274
1996	Shell Offshore Miss Cyn	F2	CP96-159	Approved	New	Offshore	GM	LA	45	75	600
1997	El Paso Havasu Crossover	F3	CP96-329	Pending	Expn	<u>Western</u>	AZ	TX	98	20	180
1997	Marathon Oil Nautilus	F4	CP96-790	Announced	New	Offshore	GM	LA	101	121	600
1997	Shell Offshore Grand Banks	F5	CP96-307	Approved	New	Offshore	GM	LA	50	NA	600
1997	Stingray Offshore Garden Bank	F6	CP96-91	Pending	New	Offshore	GM	LA	15	9	75
1997	Texaco Offshore Deep Water	F7	NA	Announced	New	Offshore	GM	LA	130	300	600
1997	Centana Energy Offshore	F8	N/A	Announced	New	Offshore	GM	LA	81	60	300
1997	TransColorado Pipeline	F9	CP90-1777	Approved	New	<u>Central</u>	CO	NM	300	184	300
1997	Transwestern San Juan East	F10	CP96-10	Approved	Expn	Southwest	NM	TX	NA	15	170
1997	Transok System Expn	F11	N/A	Announced	Expn	Southwest	OK	OK	130	75	255
										Total New Capacity	3,954
Western											
1996	Paiute Pipeline Elko Lateral	G1	CP93-751	Approved	Expn	Western	NV	NV	NA	NA	2
1997	Paiute Pipeline Tahoe Lateral	G2	CP94-29	Approved	Expn	Western	NV	CA	23	11	13
1997	Tenneco Baja SoCal Interconnect	G3	CP96-140	Announced	New	Western	CA	CA	16	NA	40
1997	San Diego G&E Pipeline 2000	H5	CP93-117	Approved	New	<u>Western</u>	CA	CA	80	85	40
										Total New Capacity	95
Mexico											
1997	Tenneco Baja Mexacali Export	H1	CP96-140	Approved	New	<u>Western</u>	CA	MX	1	NA	40
1997	Gas Co. of New Mexico	H2	CP93-98	Approved	New	<u>Southwest</u>	NM	MX	NA	NA	12
1997	Midcon Texas Export	H3	CP96-140	Announced	Expn	<u>Southwest</u>	TX	MX	10	NA	270
1997	Midcon Texas Mexico Project	H4	CP96-140	Pending	New	Mexico	MX	MX	92	40	270
1997	SoCal Project Vecinos	H8	CP94-207	Approved	New	<u>Western</u>	CA	MX	8	100	500
1998	El Paso Samalayucca II	H6	CP93-252	Approved	Expn	<u>Southwest</u>	TX	MX	36	57	300
1998	Coastal States Export	H7	CP96-770	Pending	New	<u>Southwest</u>	TX	MX	18	NA	200
										Total New Capacity	1,592

¹ Announced = Prior to filing with regulatory authorities. Pending = Before regulatory authority for review and acceptance. Approved = Fully or conditionally approved by regulating authority; may or may not be under construction.

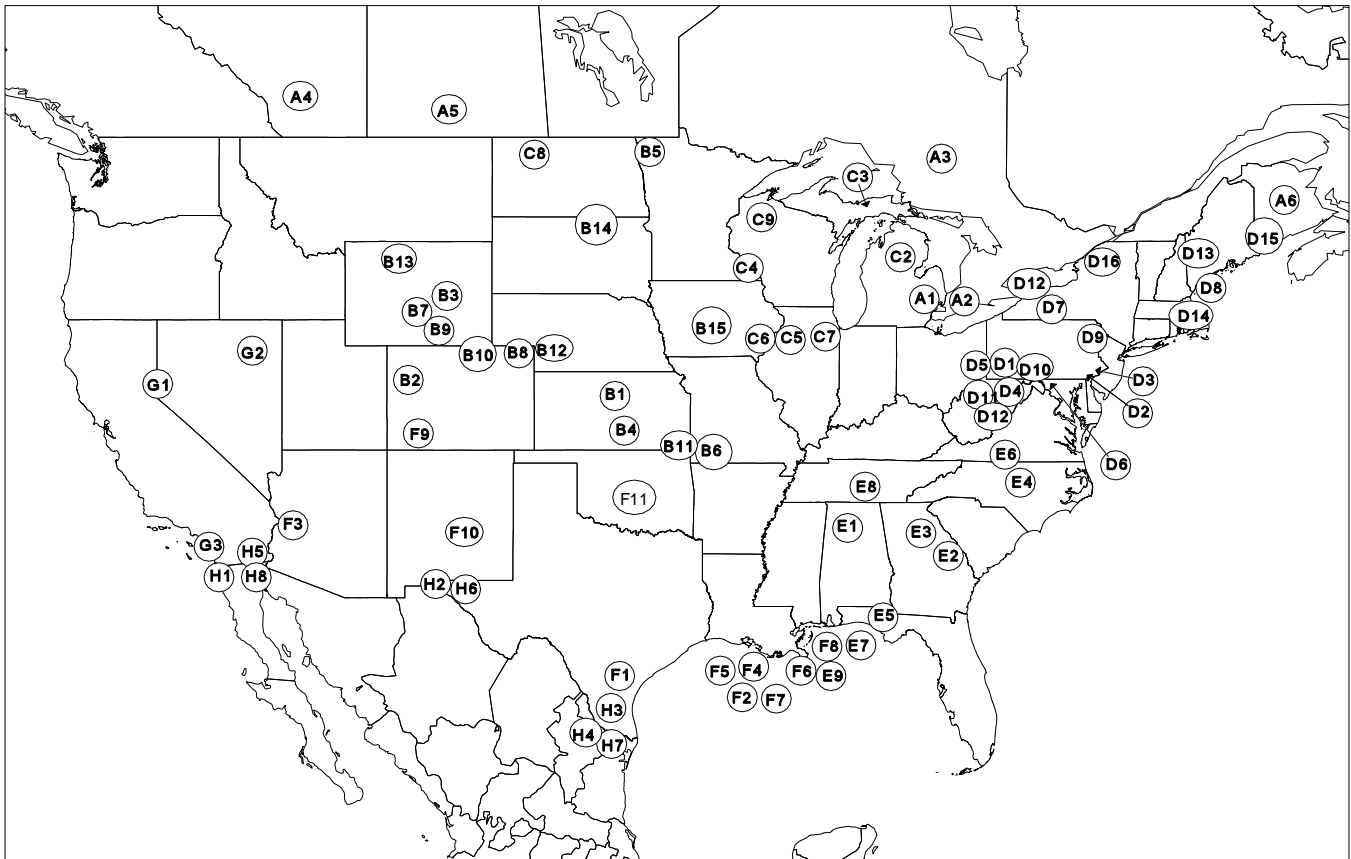
² Underlined items indicate project crosses regional boundary.

MMcf/d = Million cubic feet per day. Expn = Expansion. NA = Not available. N/A = Not applicable.

NGPL = Natural Gas Pipeline Co. of America; CIG = Colorado Interstate Gas Co.; CNG = CNG Transmission Co; SONAT = Southern Natural Gas Co.

Source: Energy Information Administration, EIAGIS-NG Geographic Information System, Natural Gas Proposed Pipeline Construction Database, as of September 1996, compiled from Federal Energy Regulatory Commission filings and various industry news sources.

Figure G1. General Location of Major Pipeline Construction Projects, Approved or Announced, 1996-2000
(Keyed to Table G1)



Source: Energy Information Administration (EIA), ELAGIS-NG Geographic Information System, Natural Gas Proposed Pipeline Construction Database, as of September 1996, based on information filed with the Federal Energy Regulatory Commission and compiled from various industry sources.

development of the area's coalbed methane and other supplies in the area has led to excess supply. Originally this production was expected to be consumed in the California market, and pipeline capacity was developed with that in mind. Today, however, the emphasis is on finding ways to move some of this supply eastward to link with market centers in the Waha area of Texas and from there to redirect the gas through northern and eastern Texas to Midwest and Northeast markets. The pipeline companies in the area, Transwestern Pipeline and El Paso Natural Gas, are planning to expand the capacity on that portion of their systems (Figure G2, items A and B, respectively) to direct more production eastward to the Waha/Permian Basin centers.

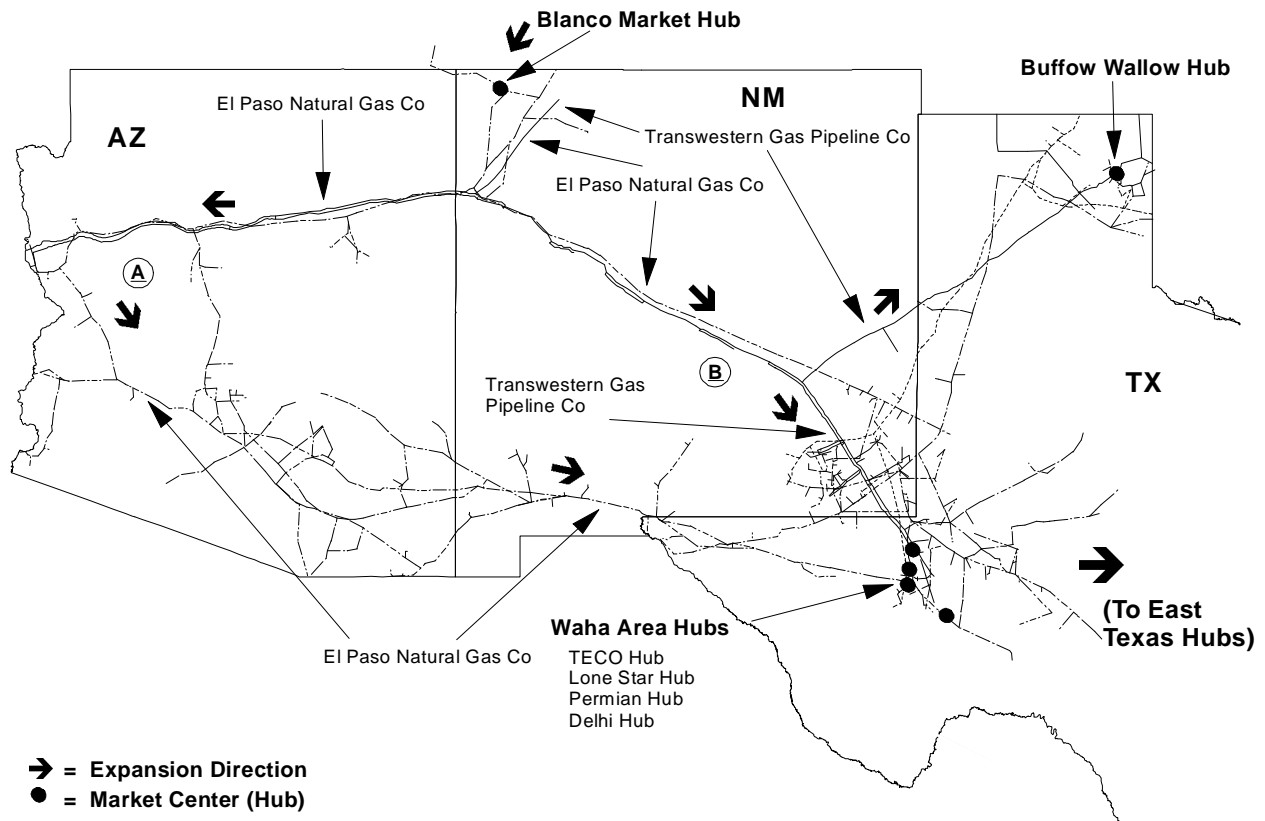
In particular, these expansions will increase the operations of the Blanco center, which is strategically located at the terminus of the Transwestern and El Paso pipeline systems exiting the San Juan Basin in northern New Mexico. This center has been operating at full capacity and could grow

significantly as additional capacity becomes available and the option to move greater volumes eastward increases. The effect on those market centers to the west, for instance the California Energy (SoCal) and Mojave center, is problematic since those centers are geared more toward parking and loaning services with limited emphasis on transportation services. The most significant impact can be expected at the Waha area and Buffalo Wallow centers as they compete with each other to direct the additional flows to the eastern Texas area and beyond.

Access to Oklahoma's Anadarko Basin

The Oklahoma Anadarko Basin is another production area that has the potential for development of greater access to regional market centers, although currently only one major project, the Transok Pipeline Company's system-wide expansion project, is slated for the area. Market centers located in eastern Texas and northern and southern Louisiana

Figure G2. Planned Expansions to Improve Service From San Juan (Blanco) Area to West and North Texas Market Centers, 1997



Note: Not all area pipelines are represented.

Source: Energy Information Administration (EIA), EIAGIS-NG Geographic Information System, Natural Gas Market Center/Hub and Natural Gas Proposed Pipeline Construction Databases, as of September 1996, based on information filed with the Federal Energy Regulatory Commission and from various industry news sources.

could benefit from interest and increased access to the relatively lower priced production in the area. Current regional pipeline systems, with some improvements in interconnections, could direct some of their flows eastward—for instance, via the Transok Pipeline system onto the Ozark and NORAM Pipeline systems for routing to the Perryville centers in northern Louisiana (Figure G3). Another option would be to route their flows through the Carthage center in southeast Texas via the intrastate Texoma Pipeline system which runs southward from northeast Texas. Tejas Gas Company, which is a major marketer (shipper) as well as an administrator of several market center operations, recently acquired the Transok system, perhaps in part with the intention of rerouting some of the Anadarko production to higher priced markets via current and future market center interconnections.¹³²

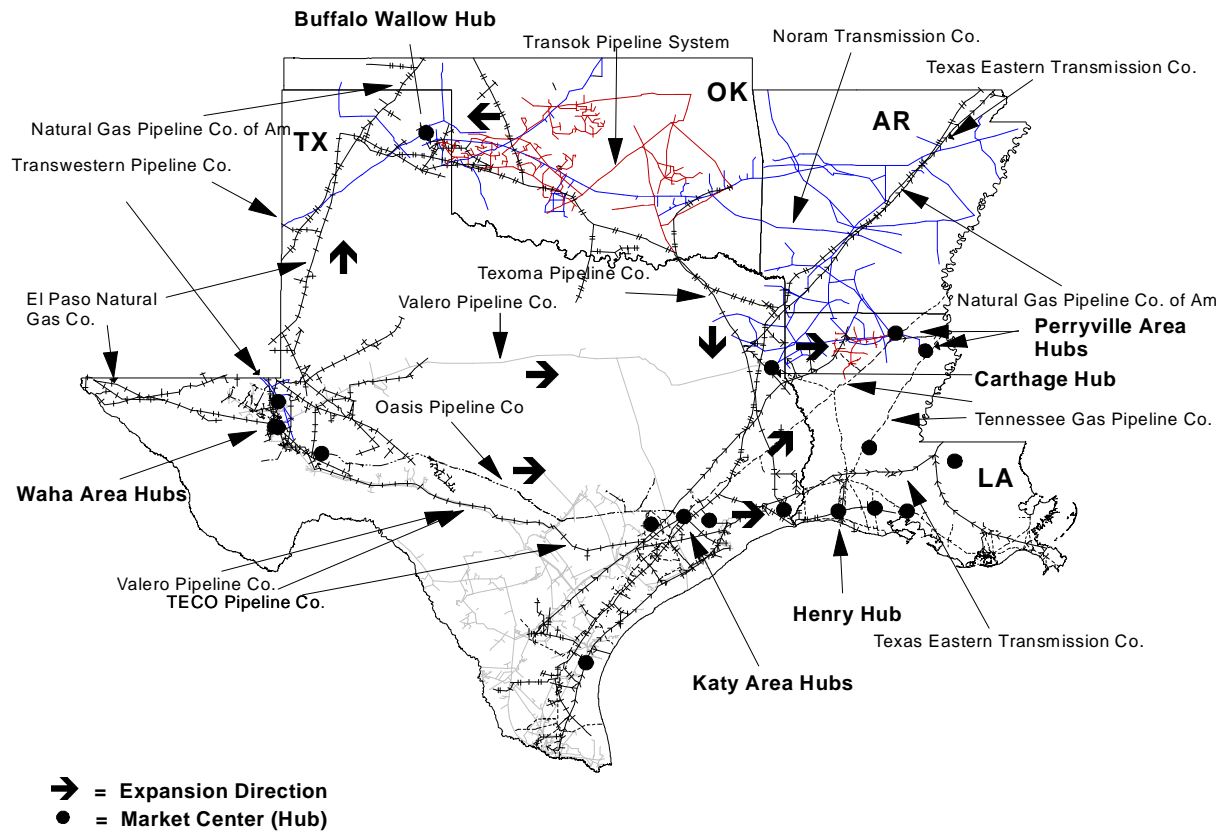
Northeast

Planned expansions in the Northeast Region are somewhat unique in that a number of the projects represent cooperative efforts between several of the regional pipeline systems. For instance, the CNG Transmission and Texas Eastern Transmission Companies have several projects planned to improve service to their own customers that are tied to the completion of the others. The Texas Eastern expansion of service to some of its Virginia and eastern Pennsylvania service areas is dependent, in part, upon the completion of the CNG Transmission PL-1 line and Seasonal Service expansion projects (including improvements to storage deliverability).

Columbia Gas Transmission, with its “Market Expansion” project, is also providing improvements (especially to storage services) on its system that increase deliverability to several major interconnections with these same pipelines. National

¹³²See “Tejas Gas Buys Transok,” *Gas Processors Report* (Houston, TX, June 3, 1996).

Figure G3. Oklahoma and West Texas Gas Flows to East Texas and Louisiana, 1996



Note: Not all area pipelines are represented.

Source: Energy Information Administration (EIA), EIAGIS-NG Geographic Information System, Natural Gas Market Center/Hub and Natural Gas Proposed Pipeline Construction Databases, as of September 1996, based on information filed with the Federal Energy Regulatory Commission and from various industry news sources.

Fuel Gas Supply Company, another major regional system, has proposed upgrades to its system based upon the eventual completion of projects by Columbia, CNG, and Texas Eastern. In particular, National Fuel's project will complement CNG's planned improvement of its system that flows gas between Leidy, Pennsylvania, a major storage area and hub interconnection point, and Steuben County, New York and northward, where CNG and National Fuel have major interconnections.

Of the 26 projects planned within the region representing 2,310 MMcf per day of new capacity, 17 projects are either directly or indirectly linked by mutual service needs or partnerships.¹³³ These 17 constitute about 50 percent, or 1,115 MMcf per day, of the new capacity additions in the region.

¹³³Transcontinental Gas Pipeline Company and Tennessee Gas Pipeline Company also have several projects in the region that will benefit from and support the expansions in the region.

Import capacity from Canada also would increase in the region with the completion of several border interconnection enhancements between U.S. pipelines and Transcanada Pipeline Ltd.¹³⁴ Pipeline capacity increases are planned at several points in New York State that are tied in with expansion projects announced by Iroquois Pipeline Company and National Fuel Gas Supply Company.

Central

Proposed capacity additions in the Central Region are second only to those of the other major producing area, the Southwest. The major reasons for this are (1) the expansion of the Northern Border Pipeline and Viking systems and proposed completion of the long-delayed Altamont system connecting with supplies from Canada, and (2) the expansion

¹³⁴These projects are part of the Transcanada system-wide expansion projects slated to improve exports to the United States by 169 MMcf per day.

of capacity out of the Rocky Mountain area toward the East (see below). In all, additions amounting to 3,444 MMcf per day of new capacity are planned.

The “Alliance Project” (Table G1 under Midwest), planned for completion by 1999, could also potentially add to the available deliverability in the Central Region. Its route from British Columbia to Illinois will take it through the Central Region but no interconnections within the region have been announced.

Rocky Mountain Supplies Redirected Toward Eastern Markets

In the past, Wyoming and Utah supplies generally moved to a strong southern California gas market, but that market has developed an excess of pipeline capacity during the past several years and is currently considered a soft market for natural gas. With an emphasis on the western market, pipeline capacity eastward was limited over the years.

On the other hand, customers in the Midwest and East are very interested in having greater access to these lower priced supplies.¹³⁵ The situation has generated planning on the part of several pipeline companies in the area to expand capacity and fill the need. For instance, KN Interstate has announced plans for the “Pony Express” line (255 MMcf per day), and Trailblazer/Overthrust/Wyoming Interstate system (100 to 200 MMcf per day) have filed expansion plans with the Federal Energy Regulatory Commission. The latter expansion would dovetail with Natural Gas Pipeline Company of America’s plans to expand capacity on its Amarillo line moving supplies to the Midwest Region (Figure G4). The several market centers at either end of this expansion could be expected to benefit, although some centers located in the Waha and Texas Panhandle may experience greater competition for their Midwestern business.

Midwest

During the next several years, service to the Midwest Region will grow with 3,257 MMcf per day of new interstate capacity added, ranking it third among the six regions. What distinguishes the growth in the Midwest is that the vast majority of this new capacity would be on newly built trunklines or extensions to existing pipelines bringing

¹³⁵Producers in the Rocky Mountain area have had to endure low prices for their gas for the past several years because of this limited access. They hope that expanded access to these markets will bring them the prices currently experienced at the East Texas and Louisiana interconnections. Most likely, however, most analysts agree, price levels will equalize somewhere between the two.

supplies from Canada. The Midwest will be the terminus for the planned Alliance project, which alone would increase area service by 1,200 MMcf per day. Coupled with the extension of the Northern Border Pipeline to Manhattan, Illinois, near Chicago, completion of these projects would increase the Midwest Region’s access to Canadian supplies by more than 116 percent from levels in 1990.

Within the region, the Great Lakes Transmission Company will complete its system expansion that began during the early 1990’s. Besides adding to overall system capacity, the multi-year projects emphasize development and enhancement of system security and backup. Two of the three projects will add 131 MMcf per day of new system capacity. The third, the enhancement of the St. Clair, Michigan border crossing site, will add 50 MMcf per day of new capacity at that point (Table G1, under Canada). However, in the latter case, the primary purpose of the project was to provide additional backup capability at the crossing.

Canadian Expansions

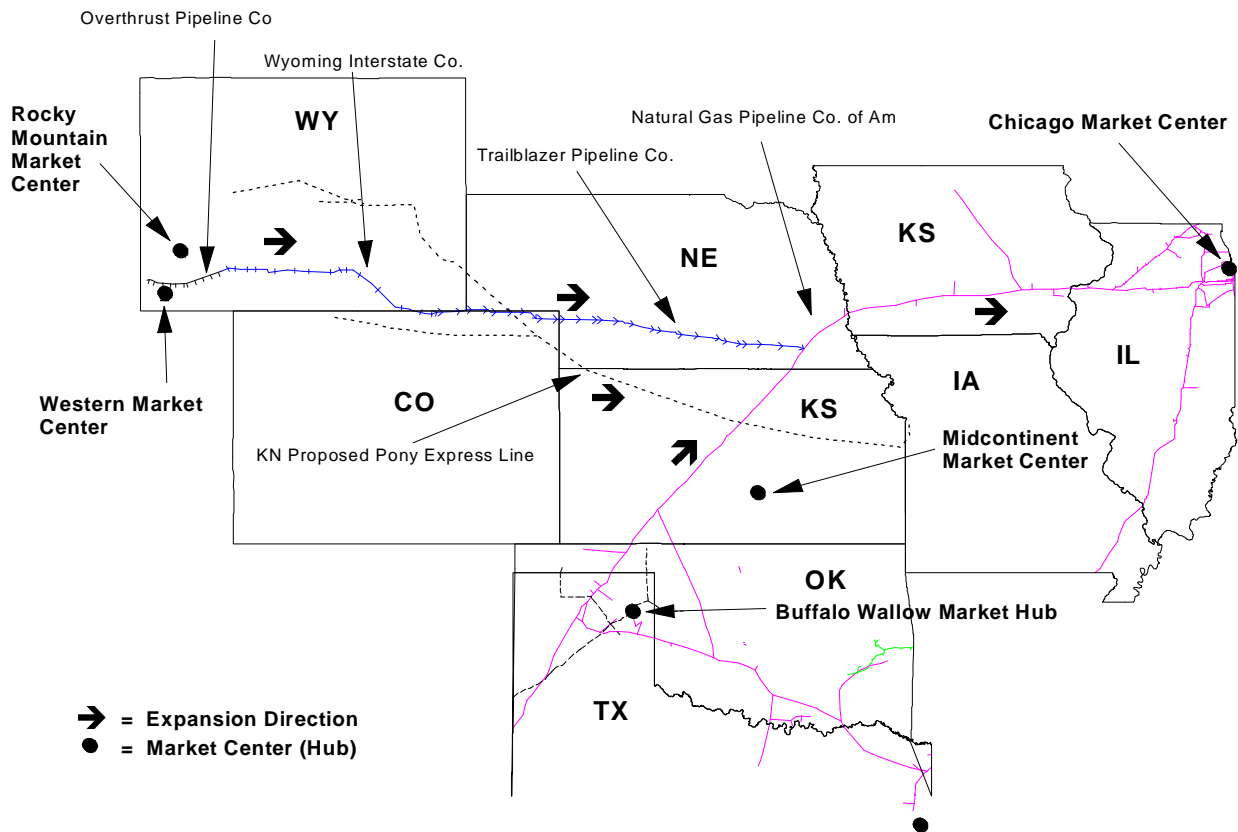
Ten projects are planned that will add 3,576 MMcf per day to U.S. import capacity from Canada over the next 4 years, an increase of 36 percent from 1995 levels. The volume increase is almost as much as the import capacity added between 1991 and 1994, 3,717 MMcf per day.¹³⁶ This anticipated growth reflects the continuing U.S. demand for Canadian natural gas, especially in the Midwest and Northeast regions.

Several projects are also planned that will direct 200 MMcf per day of new capacity from the United States into Canada. These projects will increase bidirectional service capability at the border and also direct some supplies for transshipment to Niagara, New York, via Canadian pipelines.

Within Canada itself, several projects are planned that will improve operational flows somewhat, add to export capability, and enhance the business operations of several of the regional market centers. For instance, several Canadian market centers are currently limited by available capacity on the TransCanada Pipeline system. Production capabilities in Western Canada, especially in Alberta, exceed the amount of pipeline capacity now existing on the system in that area. As a result, Canadian shippers are unable to reach their full potential market to the east and market centers in the area. The Intra-Alberta, Empress, and AECO-C hubs in particular,

¹³⁶Energy Information Administration, *Energy Policy Act Transportation Study: Interim Report on Natural Gas Flows and Rates*, DOE/EIA-0602 (Washington, DC, October 1995), p. 22.

Figure G4. Planned Central Region Pipeline Expansions to Improve Service to the Midwest Region, 1996-1999



Note: Not all area pipelines are represented.

Source: Energy Information Administration (EIA), EIA GIS-NG Geographic Information System, Natural Gas Market Center/Hub and Natural Gas Proposed Pipeline Construction Databases, as of September 1996, based on information filed with the Federal Energy Regulatory Commission and from various industry news sources.

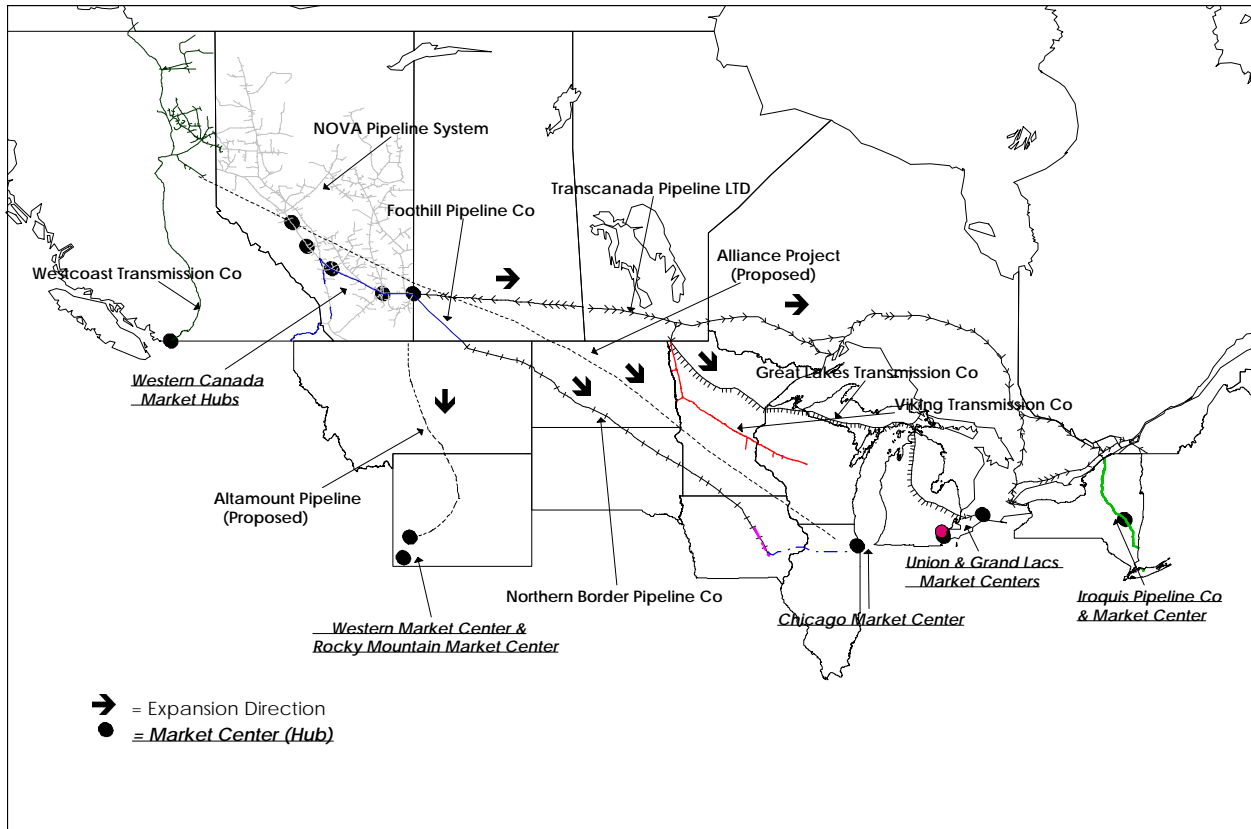
are well positioned but unable to grow further. To help alleviate the situation, several expansions and two new pipeline projects have been proposed. In the latter case, a new natural gas pipeline (the Alliance project) would bring natural gas from British Columbia to the Chicago, Illinois area along the right-of-way of an existing oil pipeline (Figure G5). Another new system, the Palliser Pipeline, will be constructed within the province of Alberta and linked to the TransCanada pipeline system. It is being planned as an alternative route to the existing NOVA system. On the Canadian east coast, the Sable TransCanadian project will be constructed to bring supply to the eastern region from the soon-to-be-developed Sable Island Offshore project.

TransCanada Pipeline Ltd. has also applied to the Canadian National Energy Board for permission to expand its facilities from Saskatchewan to Quebec (286 million cubic feet in 1996

with additional expansions in 1997 and 1998). These expansion plans, when completed, should not only provide room for growth at the Alberta hubs but should also affect the operations at the several market centers located along the proposed expansion corridors. The Iroquois center (NY), and perhaps the Grand Lac (MI) and Union Gas (ON) centers, could benefit from TransCanada's expansion, while the Chicago center may benefit if the Alliance project is completed and the appropriate interconnection(s) can be developed.

In August 1996, the Federal Energy Regulatory Commission approved construction of the Northern Border Pipeline Company expansion project, which would add 700 MMcf per day to import capacity at the Montana border. Correspondingly, Foothill Pipe Line Ltd. of Canada, which interconnects with Northern Border Pipeline at Monchy, Montana, will expand its eastern leg by the same amount.

Figure G5. Planned Canadian Import Expansion Areas, 1995-1999



Note: Not all area pipelines are represented.

Source: Energy Information Administration (EIA), EIA GIS-NG Geographic Information System, Natural Gas Market Center/Hub and Natural Gas Proposed Pipeline Construction Databases, as of September 1996, based on information filed with the Federal Energy Regulatory Commission and from various industry news sources.

Mexican Connections

Several projects have been proposed to add capacity to the export capability of U.S. natural gas companies located near the border with Mexico. None of the projects represent enhancements to import capabilities, which currently is at 350 MMcf per day, a figure that has not changed since the 1980's. All of the proposed projects are to support mostly industrial and power generator customers located in the border area.

None of the projects proposed since 1991 have actually been implemented, when export capacity to Mexico stood at 889 MMcf per day. Several of the projects are competing within and for the same market. For example, the Southern California Gas Company's Project Vecinos (jointly with Pacific Interstate Offshore Corporation) and the El Paso

Natural Gas Company's Samalayucca project are both seeking to negotiate with Mexican buyers for firm shipping agreements at essentially the same location. Nevertheless, both companies view their projects as proceeding regardless of the outcome of negotiations.

Most of the proposed projects have been proceeding slowly for environmental, economic, and regulatory reasons. One obstacle has been overcome with the installation of Mexico's newly formed regulatory authority, the Comisión de Energía (CRE). The CRE has issued less restrictive regulations on foreign investment in Mexico affecting the ownership and operation of pipeline facilities owned by others. It is expected that in the fall of 1996 the CRE will announce the successful domestic bidder for natural gas services and power generation in the Baha area of northern Mexico, leading to final implementation of several of the proposed projects, assuming financing and other arrangements are completed.

Current projects represent approximately 1,592 MMcf per day of additional capacity. Midcon Texas, Inc. and Coastal States Gas Transmission Company also have plans to construct pipelines within Mexico that will link with their border

crossing project and Texas intrastate pipeline construction projects. If completed, these pipelines will be the first ones constructed in Mexico by U.S. companies in recent memory.