



Utilities Technical Report

March 2005



Submitted To:

**CDOT Region 6
2000 S. Holly
Denver, CO 80222**



Submitted By:

**Goodbee and Associates
2725 S. Pennsylvania Street
Englewood, CO 80110**

I INTRODUCTION TO ANALYSIS

A complete utility inventory and impact analyses have been performed for the C470 corridor. The complete inventory is included as Attachment 1, Table 1. Attachment 1, Tables 2a and 2b list all utilities that could potentially be impacted by the alternatives assessed in this document: an Express Lane Alternative and a General Purpose Lane Alternative. A No Action Alternative is also considered, but no impacts are associated with this option.

A complete list of utility companies that may be present in the corridor was obtained by contacting the Utility Notification Center of Colorado (UNCC). Each of the companies was contacted and information was obtained regarding any facilities present in the corridor.

Based on discussions with CDOT personnel at the Utility Scoping Meeting held 18 July 2003, only major utilities have been considered for this Environmental Assessment report. Major utilities are defined as follows, per CDOT: water mains greater than or equaling 60" in diameter; electrical transmission lines; fiber optic lines, including backbone, trunk lines, and fiber considered critical to national security; and large sanitary sewer lines greater than or equaling 60" in diameter.

II AFFECTED ENVIRONMENT

Attachment 1 Table 3 lists all major utilities inventoried for this investigation, and Figures 1a-1c and 2a-2c show approximate utility locations as well as the outline of the footprint for the recommended alternatives for improvements along the C470 corridor.

The following utility companies own facilities located within the footprints for recommended improvements along the C470 corridor, therefore these companies own facilities that could potentially be impacted by the recommended alternatives. Contact names and information are provided for each company.

Table 1
Major Utility Contact Information

Utility Company	Contact Name	Contact Telephone Number
City of Englewood	Tom Brennan	(303)762-2654
Comcast	James Nolan	(303)603-5604
Denver Water	Lou Vullo	(303)628-6671
Lockheed Martin	Barb Carlson	(303)971-8867
MCI	Jesse Padilla	(303)214-7119
Northern Douglas County Water and Sanitation District	Tom Napollili	(303)985-3636
Qwest Communications	Shane Bracken	(303)885-8867
Qwest Local Area Network	Jim Elkins	(303)792-6082
Touch America*	Patrick McCarthy	(720)870-7564
US Sprint	Nick Muller	(303)789-4745
Xcel Energy	Bill Selchert	(303)980-3846
XO Communications	Steve Valdez	(303)539-1022

*Now owned by 360 Networks

For the purpose of this report, utilities have been separated into five subgroups. These subgroups are *telephone and communications, electrical and gas, water and sanitary, ditches, and railroads*. The major infrastructures are owned mainly by the telephone and communication, electrical and gas, and water and sanitary subgroups. Utilities from each subgroup are present throughout the corridor as C470 services a major residential and commercial population. The subgroups describe the type of utility rather than the company that owns the specific facility; for example Lockheed Martin owns fiber optic communication lines in the project corridor; their lines are included in the telephone and communications subgroup.

III ENVIRONMENTAL CONSEQUENCES

Figure 1 was utilized to determine areas where utilities would likely be impacted by construction related to the recommended improvements. The following paragraphs describe all major utilities that may be impacted, based on information obtained to date.

Utility impacts were evaluated in segments along the C470 corridor as follows: Kipling to Santa Fe; Santa Fe; Santa Fe to University; and University to I-25. Santa Fe has been considered as a separate segment. Impacts will be refined as design progresses. The area of impacts, or footprint, for both the General Purpose Lane and the Express Lane Alternatives, are only slightly different. In general, utility impact analyses for both alternatives showed the same utilities will be impacted by either alternative, however impacts for each alternative are listed separately in the following sections III.B and III.C.

A. No Action Alternative

In every segment, no utility impacts would occur if no action is taken in the C470 corridor.

B. General Purpose Lane Alternative

Kipling to Santa Fe

Telephone and Communications

Comcast owns one fiber optic line in this segment that could potentially be impacted by this project. This fiber line provides cable television and internet services and is considered by Comcast to be a trunk line. The Comcast fiber line crosses C470 from north to south at Garrison Street, east of Kipling. The fiber is aerial and resides on Xcel-owned poles on either side of the C470 right-of-way.

Lockheed Martin owns three fiber optic lines in this segment that could potentially be impacted by this project. These fiber lines are considered critical to national security and provide direct communications from Lockheed Martin's Littleton offices to other Lockheed Martin facilities and facilities such as NASA. These fiber lines are buried and have stringent security requirements associated with any potential construction impacts. No excavation or construction can occur within a 6 ft radius of any of Lockheed Martin's fiber optic lines 48 hours prior to or after a shuttle take-off. Any direct impacts to these fiber lines must be approved by Lockheed Martin prior to start of work, and if any fiber line will be exposed overnight, an armed guard must be hired to protect the line.

Qwest Local Area Network owns one buried fiber optic line in this segment that could potentially be impacted by this project. This fiber optic line provides telephone and communication services and crosses C470 from west to east at Ute Street west of Kipling. This fiber line is considered by Qwest to be a backbone line.

Electrical and Gas

Xcel owns one electric transmission line in this segment that could potentially be impacted by this project. Transmission lines provide high voltage power from power plants to large transformers for distribution to local areas. This particular transmission line crosses C470, north to south, at the Platte River greenway, just west of Santa Fe. This line is aerial and primarily supported by large wooden column style towers.

Xcel also owns two buried high pressure gas transmission lines in this segment that could potentially be impacted by this project. High pressure gas transmission lines are similar in function to electrical transmission lines, in that they provide large volumes of gas for distribution to local areas. The first of the gas transmission lines crosses C470, north to south, directly beneath the highway, at Garrison Street. The second parallels

the north right-of-way of C470 from Platte Canyon Rd. east to the Kiewit gravel pit entrance, crossing C470, north to south, and proceeding southward away from C470 right-of-way, and also continuing eastward in the north right-of-way until proceeding north approximately 500 ft east of the pit entrance.

Water and Sanitary

Denver Water owns one major water main in this segment that could potentially be impacted by this project. The 90" raw water main is buried and crosses C470 beneath the east ramps at Wadsworth.

Based on information gathered to date, there are no major sanitary sewer mains in this segment impacted by any proposed improvements along the C470 corridor.

Santa Fe

Telephone and Communications

Comcast owns two buried fiber optic conduits in this segment that could potentially be impacted by this project. These fiber lines provide cable television and internet services to businesses and residents and are considered trunk lines. The first Comcast fiber line crosses C470 beneath the west ramps at Santa Fe, and is outside of the footprint to the north and south. The second fiber line crosses C470 attached to the Santa Fe overpass and continues to the north and south in the southbound lanes of Santa Fe.

Lockheed Martin owns one critical fiber optic communication conduit in this segment that could potentially be impacted by this project. This fiber line is part of the same network mentioned in the Kipling to Santa Fe segment, and the same security measures apply. The fiber line is buried and crosses C470 attached to the Santa Fe overpass.

MCI owns one fiber optic communication conduit in this segment that could potentially be impacted by this project. The MCI fiber line is considered a backbone line and crosses C470 on the railroad bridge owned by Burlington Northern and Santa Fe Rail Company (BNSF). The BNSF bridge is the eastern-most of two rail overpass bridges just east of Santa Fe. This fiber line is buried to the north and south of this overpass bridge.

Qwest Communications owns one fiber optic communication conduit in this segment that could potentially be impacted by this project. Qwest Communications is a division of Qwest that provides long-distance services, and all of their lines are considered backbone lines. This fiber conduit crosses C470 on the BNSF bridge. This fiber line is buried to the north and south of this overpass bridge.

US Sprint owns one fiber optic communication conduit in this segment that could potentially be impacted by this project. The US Sprint fiber line is considered a backbone line and crosses C470 attached to the railroad bridge owned by Union Pacific Railroad Company (UPRR). The UPRR bridge is the western-most of two rail overpass bridges just east of Santa Fe. This fiber line is buried to the north and south of the overpass bridge.

Electrical and Gas

Xcel owns one high pressure gas transmission line in this segment that could potentially be impacted by this project. This gas transmission line is buried and crosses C470 beneath the west ramps at Santa Fe.

Based on information gathered to date, there are no electrical transmission lines in this segment impacted by any proposed improvements along the C470 corridor.

Water and Sanitary

Based on information gathered to date, there are no major water or sanitary sewer mains in this segment impacted by any proposed improvements along the C470 corridor.

Ditches

The City of Englewood owns one ditch in this segment that could potentially be impacted by this project. This ditch is known as the City Ditch and provides water to the City of Englewood from the South Platte River. The affected portion of the City Ditch is a buried 58" x 36" reinforced concrete pipe that crosses C470 beneath the west ramps of Santa Fe.

Railroads

The Burlington Northern and Santa Fe Railroad (BNSF) Company owns one railroad. BNSF owns the eastern-most of two rail overpass bridges that crosses C470 on the east side of Santa Fe.

The Union Pacific Railroad Company (UPRR) owns one railroad in this segment that could potentially be impacted by this project. UPRR owns the western-most of two rail overpass bridges crossing C470 on the east side of Santa Fe.

Rail companies often attach their own utilities to their rail and structures. To date, Goodbee has been unable to confirm the presence of any BNSF or UPRR owned utilities along either rail system.

Santa Fe to University

Telephone and Communications

Comcast owns four buried and one overhead fiber optic cable conduits in this segment that could potentially be impacted by this project. These fiber lines provide cable television and internet services to residents and businesses and are considered trunk lines by Comcast. The first buried fiber line in this segment crosses beneath C470, north to south, at the High Line Canal crossing between Santa Fe and Lucent. The second buried fiber line crosses C470, north to south, east of the High Line Canal crossing, west of Lucent. The third buried fiber line crosses C470 beneath Broadway, and the fourth crosses C470 beneath University. The overhead line is on Xcel-owned poles on the south side of C470 at the High Line Canal crossing. The buried fiber line goes aerial at this location, and the poles are within the footprint for the recommended improvements. These poles are primarily used for electrical distribution, which is not considered a major utility.

Qwest Communications owns one buried fiber optic communication conduit in this segment that could potentially be impacted by this project. This fiber optic line provides long distance services and is considered a backbone line by Qwest. This critical fiber line crosses C470 on the west side of the Lucent overpass.

Electrical and Gas

Xcel owns one electric transmission line in this segment that could potentially be impacted by this project. Electric transmission lines are considered critical for maintaining power supply to large areas. This line is aerial and supported in this area by the thin steel-style towers. This transmission line crosses C470 west of Broadway.

Water and Sanitary

Denver Water owns one major water main in this segment that could potentially be impacted by this project. The 108" inner diameter water main is buried and crosses C470 beneath the west Ramps at University. The main then parallels the north right-of-way of C470 to the east ramps of University, where it then extends northward.

Ditches

Denver Water owns one ditch in this segment that could potentially be impacted by this project. The High Line Canal crosses C470 between Santa Fe and Lucent.

University to I-25

Telephone and Communications

Comcast owns two buried, fiber optic cable conduits in this segment that could potentially be impacted by this project. These fiber lines provide cable television and

internet services to residents and businesses and are considered trunk lines by Comcast. These lines run parallel to C470 and then crosses C470 beneath Yosemite.

Qwest Local Area Network owns one buried fiber optic communication conduit in this segment that could potentially be impacted by this project. This fiber line provides local telephone service to residents and businesses and is considered a backbone line by Qwest. The line crosses C470 at Quebec attached to the overpass.

Touch America (now owned by 360Networks) owns one buried fiber optic communication line in this segment that could potentially be impacted by this project. This fiber line provides telecommunications services and is considered a backbone line to Touch America. This fiber line crosses C470 attached to the Colorado Boulevard overpass bridge.

XO Communications owns one buried fiber optic conduit in this segment that could potentially be impacted by this project. This fiber line provides telecommunications services and is considered a backbone line to XO Communications. The fiber line crosses C470 beneath Yosemite.

Electrical and Gas

Xcel owns one electric transmission line in this segment that could potentially be impacted by this project. This transmission line is aerial and primarily supported by the thin steel-style towers. The line crosses C470 at Quebec just west of the overpass bridge.

Based on information gathered to date, no high pressure gas transmission lines were found to be impacted in this segment.

Water and Sanitary

Denver Water owns two major water mains in this segment that could potentially be impacted by this project. Both mains are buried and are 60" inner diameter conduits. The first main crosses C470 beneath the east ramps of University and parallels the south right-of-way of C470 to Quebec. The second main crosses C470 beneath the west ramps of Quebec.

Based on information gathered to date, no major sanitary sewer lines were found to be impacted by any proposed improvement along the C470 corridor in this segment

C. Express Lane Alternative

Kipling to Santa Fe

Telephone and Communications

Comcast owns one fiber optic line in this segment that could potentially be impacted by this project. This fiber line provides cable television and internet services and is considered by Comcast to be a trunk line. The Comcast fiber line crosses C470 from north to south at Garrison Street, east of Kipling. The fiber is aerial and resides on Xcel-owned poles on either side of the C470 right-of-way.

Lockheed Martin owns three fiber optic lines in this segment that could potentially be impacted by this project. These fiber lines are considered critical to national security and provide direct communications from Lockheed Martin's Littleton offices to other Lockheed Martin facilities and facilities such as NASA. These fiber lines are buried and have stringent security requirements associated with any potential construction impacts. No excavation or construction can occur within a 6 ft radius of any of Lockheed Martin's fiber optic lines 48 hours prior to or after a shuttle take-off. Any direct impacts to these fiber lines must be approved by Lockheed Martin prior to start of work, and if any fiber line will be exposed overnight, an armed guard must be hired to protect the line.

Qwest Local Area Network owns one buried fiber optic line in this segment that could potentially be impacted by this project. This fiber optic line provides telephone and communication services and crosses C470 from west to east at Ute Street west of Kipling. This fiber line is considered by Qwest to be a backbone line.

Electrical and Gas

Xcel owns one electric transmission line in this segment that could potentially be impacted by this project. Transmission lines provide high voltage power from power plants to large transformers for distribution to local areas. This particular transmission line crosses C470, north to south, at the Platte River greenway, just west of Santa Fe. This line is aerial and primarily supported by large wooden column style towers.

Xcel also owns two buried high pressure gas transmission lines in this segment that could potentially be impacted by this project. High pressure gas transmission lines are similar in function to electrical transmission lines, in that they provide large volumes of gas for distribution to local areas. The first of the gas transmission lines crosses C470, north to south, directly beneath the highway, at Garrison. The second parallels the north right-of-way of C470 from Platte Canyon Rd. east to the Kiewit gravel pit entrance, crossing C470, north to south, and proceeding southward away from C470

right-of-way, and also continuing eastward in the north right-of-way until proceeding north ~500 ft east of the pit entrance.

Water and Sanitary

Denver Water owns one major water main in this segment that could potentially be impacted by this project. The 90" raw water main is buried and crosses C470 beneath the east ramps at Wadsworth.

Based on information gathered to date, there are no major sanitary sewer mains in this segment impacted by any proposed improvements along the C470 corridor.

Santa Fe

Telephone and Communications

Comcast owns two buried fiber optic conduits in this segment that could potentially be impacted by this project. These fiber lines provide cable television and internet services to businesses and residents and are considered trunk lines. The first Comcast fiber line crosses C470 beneath the west ramps at Santa Fe, and is outside of the footprint to the north and south. The second fiber line crosses C470 attached to the Santa Fe overpass and continues to the north and south in the southbound lanes of Santa Fe.

Lockheed Martin owns one critical fiber optic communication conduit in this segment that could potentially be impacted by this project. This fiber line is part of the same network mentioned in Section 1.1.1.1, and the same security measures apply. The fiber line is buried and crosses C470 attached to the Santa Fe overpass.

MCI owns one fiber optic communication conduit in this segment that could potentially be impacted by this project. The MCI fiber line is considered a backbone line and crosses C470 on the railroad bridge owned by Burlington Northern and Santa Fe Rail Company (BNSF). The BNSF bridge is the eastern-most of two rail overpass bridges just east of Santa Fe. This fiber line is buried to the north and south of this overpass bridge.

Qwest Communications owns one fiber optic communication conduit in this segment that could potentially be impacted by this project. Qwest communications is a division of Qwest that provides long-distance services, and all of their lines are considered backbone lines. This fiber conduit crosses C470 on the BNSF bridge. This fiber line is buried to the north and south of this overpass bridge.

US Sprint owns one fiber optic communication conduit in this segment that could potentially be impacted by this project. The US Sprint fiber line is considered a backbone line and crosses C470 attached to the railroad bridge owned by Union Pacific

Railroad Company (UPRR). The UPRR bridge is the western-most of two rail overpass bridges just east of Santa Fe. This fiber line is buried to the north and south of the overpass bridge.

Electrical and Gas

Xcel owns one high pressure gas transmission line in this segment that could potentially be impacted by this project. Gas transmission lines are defined in section 1.1.1.2. This gas transmission line is buried and crosses C470 beneath the west ramps at Santa Fe.

Based on information gathered to date, there are no electrical transmission lines in this segment impacted by any proposed improvements along the C470 corridor.

Water and Sanitary

Based on information gathered to date, there are no major water or sanitary sewer mains in this segment impacted by any proposed improvements along the C470 corridor.

Ditches

The City of Englewood owns one ditch in this segment that could potentially be impacted by this project. This ditch is known as the City Ditch and provides water to the City of Englewood from the South Platte River. The affected portion of the City Ditch is a buried 58" x 36" reinforced concrete pipe that crosses C470 beneath the west ramps of Santa Fe.

Railroads

The Burlington Northern and Santa Fe Railroad (BNSF) Company owns one railroad in this segment that could potentially be impacted by this project. BNSF owns the eastern-most of two rail overpass bridges that crosses C470 on the east side of Santa Fe.

The Union Pacific Railroad Company (UPRR) owns one railroad in this segment that could potentially be impacted by this project. UPRR owns the western-most of two rail overpass bridges crossing C470 on the east side of Santa Fe.

Rail companies often attach their own utilities to their rail and structures. To date, Goodbee has been unable to confirm the presence of any BNSF or UPRR owned utilities along either rail system.

Santa Fe to University

Telephone and Communications

Comcast owns four buried and one overhead fiber optic cable conduits in this segment that could potentially be impacted by this project. These fiber lines provide cable television and internet services to residents and businesses and are considered trunk lines by Comcast. The first buried fiber line in this segment crosses beneath C470, north to south, at the High Line Canal crossing between Santa Fe and Lucent. The second buried fiber line crosses C470, north to south, east of the High Line Canal crossing, west of Lucent. The third buried fiber line crosses C470 beneath Broadway, and the fourth crosses C470 beneath University. The overhead line is on Xcel-owned poles on the south side of C470 at the High Line Canal crossing. The buried fiber line goes aerial at this location, and the poles are within the footprint for the recommended improvements. These poles are primarily used for electrical distribution, which is not considered a major utility.

Qwest Communications owns one buried fiber optic communication conduit in this segment that could potentially be impacted by this project. This fiber optic line provides long distance services and is considered a backbone line by Qwest. This critical fiber line crosses C470 on the west side of the Lucent overpass.

Electrical and Gas

Xcel owns one electric transmission line in this segment that could potentially be impacted by this project. Electric transmission lines are considered critical for maintaining power supply to large areas. This line is aerial and supported in this area by the thin steel-style towers. This transmission line crosses C470 west of Broadway.

Water and Sanitary

Denver Water owns one major water main in this segment that could potentially be impacted by this project. The 108" inner diameter water main is buried and crosses C470 beneath the west Ramps at University. The main then parallels the north right-of-way of C470 to the east ramps of University, where it then extends northward.

Ditches

Denver Water owns one ditch in this segment that could potentially be impacted by this project. The High Line Canal crosses C470 between Santa Fe and Lucent.

University to I-25

Telephone and Communications

Comcast owns two buried, fiber optic cable conduits in this segment that could potentially be impacted by this project. These fiber lines provide cable television and internet services to residents and businesses and are considered trunk lines by Comcast. These lines run parallel crossing C470 beneath Yosemite.

Qwest Local Area Network owns one buried fiber optic communication conduit in this segment that could potentially be impacted by this project. This fiber line provides local telephone service to residents and businesses and is considered a backbone line by Qwest. The line crosses C470 at Quebec attached to the overpass.

Touch America (now owned by 360Networks) owns one buried fiber optic communication line in this segment that could potentially be impacted by this project. This fiber line provides telecommunications services and is considered a backbone line to Touch America. This fiber line crosses C470 attached to the Colorado Boulevard overpass bridge.

XO Communications owns one buried fiber optic conduit in this segment that could potentially be impacted by this project. This fiber line provides telecommunications services and is considered a backbone line to XO Communications. The fiber line crosses C470 beneath Yosemite.

Electrical and Gas

Xcel owns one electric transmission line in this segment that could potentially be impacted by this project. This transmission line is aerial and primarily supported by the thin steel-style towers. The line crosses C470 at Quebec just west of the overpass bridge.

Based on information gathered to date, no high pressure gas transmission lines were found to be impacted in this segment.

Water and Sanitary

Denver Water owns two major water mains in this segment that could potentially be impacted by this project. Both mains are buried and are 60" inner diameter conduits. The first main crosses C470 beneath the east ramps of University and parallels the south right-of-way of C470 to Quebec. The second main crosses C470 beneath the west ramps of Quebec.

Based on information gathered to date, no major sanitary sewer lines were found to be impacted by any proposed improvement along the C470 corridor in this segment

IV MITIGATION MEASURES

Utility impacts are relatively simple to mitigate. In general, when a privately owned utility is located within public right-of-way, the owner company is responsible for relocating the utility to accommodate a public improvement project. This usually applies to telephone and communications and electrical and gas subgroups. Also, generally speaking, when a publicly held utility must be relocated to accommodate a public improvement project, it is the projects responsibility to fund the related construction for relocation. Publicly held utilities generally fall under the water and sanitary subgroup.

Once an alternative is selected and a 30% preliminary design is complete, the design detail must be compared to the utility inventory. Based on that comparison, either utility relocations can be defined or areas where more information may be required can be identified. In most cases the utility companies do not know the depths of their facilities, and a method known as potholing can be used to determine exact depth information. Potholing utilizes a truck, known as a hydro-vac rig, which is equipped with a high-pressure sprayer and a vacuum hose. The sprayer is used to loosen soil from around utilities and the vacuum hose carries away the loosened material. This is an effective, low-risk method for finding utilities in the subsurface.

V SUMMARY/CONCLUSIONS

Based on careful analyses of any potential impacts to utilities in the C470 corridor, it appears that utilities will not be critical to this project. There are many affected utility companies throughout the project area. These utilities can be relocated based on information obtained in future investigations.

The next stage in utility coordination requires detailed design information. Engineering locates should be performed and a field survey of the locates should be completed. Any utility company that will be impacted by construction during this project should be notified. A potholing plan should be devised to determine any subsurface utility conflicts and more precisely locate any utility lines that could potentially be impacted. Any remaining conflicts will have to be resolved by relocation of that utility or creative design work.

ATTACHMENT 1

**Table 1
Utility Inventory
C470 Corridor**

Operator/Owner	In CDOT ROW	Xing/Parallel	Type	Critical	Description
Adesta Communications	y	x	fiber optic	yes	4"6" f/c conduits, buried, parallel to I-25 (east ROW)
City of Englewood	y	x	ditch	yes	"City Ditch" crosses @ Santa Fe
City of Englewood	y	x	future use		two 42" steel conduits crossing @ Lucent
City of Littleton	n	p	sanitary		8" sewer line along northern edge of County Line Road north of Broadway
Comcast	y	x	cable	yes	4" buried CATV trunk line north of Ken Caryl
Comcast	y	x	fiber/cable	yes	2" buried fiber cable conduit in median of Ken Caryl
Comcast	y	x	fiber/cable	yes	aerial fiber east of Kipling on Xcel poles; goes ug just south of ROW, heads north along Garrison
Comcast	y	x	fiber optic	yes	2 buried f/c conduits crossing C470 beneath center and east side of Yosemite
Comcast	y	x	cable		buried CATV line crossing C470 on east side of Yosemite
Comcast	y	x	fiber optic	yes	buried f/c crossing C470 beneath center of University
Comcast	y	x	cable		buried CATV line crossing C470 on east side of University
Comcast	n	p	fiber optic	yes	buried f/c paralleling County Line on the south side north of Broadway/C470 interchange
Comcast	y	x	fiber optic	yes	buried f/c crosses C470 beneath west side of Broadway
Comcast	y	x	cable		buried CATV lines crossing C470 on either side of Broadway
Comcast	y	x	fiber optic	yes	buried f/c crossing C470 -1/2 mile west of Lucent
Comcast	y	x	fiber/cable		buried f/c-cable cluster crossing west of Lucent
Comcast	y	x	fiber/cable	yes	aerial f/c-cable cluster to north and south of C470 ROW; buried crossing C470 along tunnel for Highline Canal Trail near Santa Fe, also buried cable component heads east paralleling ROW to south
Comcast	n	p	fiber/cable	yes	buried f/c-cable cluster paralleling C470 northern ROW servicing trailer park
Comcast	y	x	fiber optic	yes	buried f/c crossing C470 west of Santa Fe, along City Ditch
Comcast	y	x	fiber optic	yes	buried f/c crossing C470 into bridge at Santa Fe
Comcast	y	x	cable		2 buried cable lines crossing C470 into bridge at Santa Fe
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	water		24" raw water main crosses near Highline Canal crossing east of Santa Fe
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	water		36" main crosses C470 near Highline Canal crossing east of Santa Fe
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	water		12" main crosses C470 near Highline Canal crossing east of Santa Fe
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n		appurtenance	yes	Joseph B. Blake Water Treatment Facility between Santa Fe and Lucent south of C470
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n		water		various mains run to and from treatment facility from 12" to 36" all >-500 ft south of C470
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		24" main approaches south ROW @ Lucent
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		36" main approaches south ROW @ Lucent
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		24" main follows Plaza Drive paralleling south ROW between Lucent and Broadway
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	water		12" main crosses C470 -500 ft east of Lucent
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	water		12" main crosses C470 -850 ft west of Centennial Blvd.
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		12" main parallels north ROW from crossing -850 ft west of Centennial Blvd. to Broadway
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	water		12" main crosses C470 beneath Broadway west of center
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		8" main parallels south ROW from Broadway to east of University
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		12" main along Centennial Blvd. w/ various service lines (6"-8")
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		24" main along Dad Clark Dr. beneath center
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	water		16" main crosses C470 near line of S. Ogden Circle
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		16" main parallels north ROW from crossing @ S. Ogden to -400 ft west of University
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	water		24" main crosses C470 near line of Maplewood
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	p	water		24" main parallels north ROW from Maplewood crossing to University
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		16" main parallels south ROW from University to crossing -1000 ft east of University
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	water		16" main crosses -1000 ft east of University
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		8" main parallels north ROW for -500 ft near line of Creek Drive
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		8" main parallels north ROW for -300 ft near line of Forrest/Steel Streets
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	water		20" main crosses C470 -650 ft west of Colorado Blvd.
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		20" main parallels south ROW from crossing -650 west to Colorado Blvd.
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	x	water		24" main from C470 south along Colorado Blvd. on west side
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	x	water		10" main from C470 north, east of Colorado Blvd.

**Table 1
Utility Inventory
C470 Corridor**

Operator/Owner	In CDOT ROW	Xing/Parallel	Type	Critical	Description
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		8" main approaches south ROW near Canyongate Lane
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	water		16" main crosses C470 @ "The Links" golf course near Holly
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		8" main approaches north ROW south of County Line Rd. to Holly
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		10" main parallels south ROW north of Business Center Dr. to Quebec
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		16" main parallels north ROW along County Line Rd. alternating in and out of County Line ROW
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	water		16" main crosses C470 near Poplar Way (northern branch) at the 1985 Highway Utility Crossing
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		8" main approaches north ROW -900 ft west of line of Poplar Way (northern branch) at the 1985 Highway Utility Crossing
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n		water		various small service lines near north ROW west of line of Poplar Way (northern branch) at the 1985 Highway Utility Crossing
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		8" main approaches south ROW -200 ft west of Quebec
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	water		10" main parallels north ROW from line of Poplar Way to Quebec, becoming 8" main in areas
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	sanitary		36" sewer crosses C470 -600 ft east of Highline Canal crossing between Santa Fe and Lucent
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	sanitary		12" sewer crosses C470 -1000 ft west of Lucent
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	p	sanitary		36" sewer parallels north ROW from crossing -1000 ft west to -600 ft west of Lucent (enters north ROW for -400 ft)
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	sanitary		12" sewer crosses C470 -700 ft east of Lucent
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	sanitary		30" sewer crosses C470 near line of Ridgeline Blvd.
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	sanitary		8" sewer crosses C470 -1 mile west of Broadway
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	sanitary		8" sewer parallels south ROW from crossing -1 mile west of Broadway for -350 ft to east
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	sanitary		8" sewer parallels north ROW from crossing -1 mile west to -650 ft west of Broadway
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District			sanitary		8" sewer approaches north ROW -700 ft west of Broadway
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	sanitary		8" sewer parallels south ROW for -300 ft west to Broadway
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	sanitary		15"/20"/21" sewer parallels south ROW from Broadway east to Holly (diameter varies)
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n		sanitary		various 8" service sewers branch south from 15"/20"/21" paralleling south ROW from Broadway to Holly
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	sanitary		8" sewer parallels north ROW from -750 ft east of Ogden Circle to S. Clarkson
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	sanitary		24" sewer crosses C470 @ S. Clarkson
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	sanitary		24" sewer parallels north ROW along County Line Rd. to -2000 ft west of Colorado Blvd. (size varies)
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	sanitary		8" sewer approaches south ROW east of line of Maplewood
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n		sanitary		various 6" and 8" service sewers branch south from 24" paralleling County Line Rd.
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n		sanitary		21" sewer approaches north ROW -2000 ft west of Colorado Blvd.
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	p	sanitary		21"/12" sewer parallels north ROW from -2000 ft west to -900 ft west of Colorado Blvd. (-500 ft within ROW)
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n		sanitary		10" sewer approaches north ROW -900 ft west of Colorado Blvd.
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	sanitary		24" sewer crosses C470 -1400 ft west of Colorado Blvd.
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	sanitary		21" sewer parallels south ROW from crossing -1400 ft west to Colorado Blvd.
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n		sanitary		various 8" service sewers north and west of C470 and Colorado Blvd.
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n		sanitary		12" sewer south from C470 along west side of Colorado Blvd.
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	p	sanitary		8" and 12" force mains parallel south ROW from Colorado Blvd. To Big Dry Creek Lift Station
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	sanitary		10" Province Center SS Outfall parallels south ROW from -1500 ft west of Aberdeen Circle to Canyongate Lane
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	sanitary		15" sewer parallels south ROW from Canyongate Lane to Holly
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n		appurtenance	yes	Big Dry Creek Lift Station just west of "The Links" golf course
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n		appurtenance	yes	Marcy Gulch Wastewater Treatment Facility south of C470 and east of Santa Fe; outside of CAD map coverage
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	sanitary		12" sewer parallels south ROW from Holly to -600 ft east
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	sanitary		12" sewer crosses C470 @ Holly
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	sanitary		8" sewer parallels north ROW from crossing at Holly for -800 ft east
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	sanitary		12" sewer crossing C470 -600 ft west of Holly
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	sanitary		2x6" force mains parallel south ROW from -600 ft east of Holly to Poplar Way (northern branch) at the 1985 Highway Utility Crossing
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	sanitary		8" sewer parallels south ROW south of 2 force mains from -1500 ft west to Poplar Way (northern branch) at the 1985 Highway Utility Crossing
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	sanitary		12" sewer crosses C470 @ Poplar Way
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	y	x	sanitary		12" sewer crosses C470 on the west side of Quebec
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	sanitary		12" sewer parallels south ROW between crossing at Poplar Way and Quebec

**Table 1
Utility Inventory
C470 Corridor**

Operator/Owner	In CDOT ROW	Xing/Parallel	Type	Critical	Description
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n	p	sanitary		8" sewer parallels north ROW from crossing at Quebec -350 ft east
Denver Water	y	x	water		36" line crossing under north-bound Kipling
Denver Water	y	x	water		36" line in 54" steel casing crossing beneath Xcel oh electric at Garrison
Denver Water	y	x	water		36" line in 54" steel casing crossing at Carr
Denver Water	y	x	water	yes	90" line crosses at Wadsworth, parallels Wads. On east side to south and trends to northeast north of C470
Denver Water	y	x	water		54" line crossing west of Platte Canyon, parallels C470 ROW on south side, west to Wadsworth
Denver Water	y	x	drain		54" drain line crossing at Old Platte Canyon, now Kiewit property
Denver Water	y	x	water		48" line parallels C470 ROW on north side from Old Platte Canyon to west of Santa Fe, crossing in 66" steel casing
Denver Water	y	x	ditch	yes	H-Line Canal crossing east of Santa Fe, approaches north ROW further east
Denver Water	y	p	water		48" parallels C470 ROW on south side from west of Lucent to east of Broadway, crossing and paralleling the north ROW to east of University, heading north
Denver Water	y	x	water		36" line crossing at Broadway
Denver Water	y	p	water		24" line paralleling C470 ROW on north side from Broadway to west of University
Denver Water	y	x	water	yes	108" line crossing west of University
Denver Water	y	x	water	yes	60" line crossing east of University (in west interchange area)
Denver Water	y	p	water	yes	60" main paralleling south ROW to Quebec, enters ROW in some areas
Denver Water	y	x	water		24" line crossing west of Daniels Park, heading north along road
Denver Water	y	x	water		16" line crossing between Daniels Park and Quebec
Denver Water	y	x	water	yes	60" line crossing west of Quebec
Denver Water	y	x	water		12" line crossing at Acres Green
Denver Water	n	p	water		12" line paralleling C470 ROW on north east of Quebec to Yosemite
Denver Water	y	x	water		12" terminates in center of C470 east of Acres Green (NE-SW trending)
Denver Water	y	x	water		18" line in 30" steel casing crossing west of Yosemite
Denver Water	y	x	water		18" line in 30" steel casing crossing west of Yosemite
Denver Water	n	p	water		12" line paralleling C470 ROW on north side in shopping center lots
Denver Water	y	x	water		12" line crossing at Yosemite
Denver Water	y	x	water		36" line crossing at Yosemite
Denver Water	n	p	water		12" paralleling C470 ROW on north side in subdivision
East Cherry Creek Water and Sanitation District	y	x	water		12" line paralleling C470 southern ROW crossing between Broadway and University, paralleling C470 northern ROW, turning north east of University
East Cherry Creek Water and Sanitation District	y	x	water		new 24" main in 36" casing crossing C470 between Quebec and Yosemite, maps and as built available June 2004
ICG Communications	y	x	future use		conduit paralleling Yosemite on the east side beneath C470
Ken Caryl Ranch Water and Sanitation District	y	x	water		24" line crossing C470 beneath Ken Caryl -center
Ken Caryl Ranch Water and Sanitation District	y	x	water		20" line crossing C470 beneath Ken Caryl -center
Ken Caryl Ranch Water and Sanitation District	y	x	water		12" line crossing C470 beneath Kipling -center
Ken Caryl Ranch Water and Sanitation District	y	x	sanitary		15" line crossing C470 beneath Ken Caryl -center; parallels C470 ROW on east side to south of KC/C470 interchange
Ken Caryl Ranch Water and Sanitation District	y	x	sanitary		18" line from north Kipling turns east and parallels C470 northern ROW to Garrison, crossing C470 and continuing east paralleling southern ROW along Ute Ave.
Ken Caryl Ranch Water and Sanitation District	y	p	sanitary		24" and 30" lines from west entering C470 northern ROW between Wadsworth and Platte Canyon, stays parallel to ROW to trailer park west of Santa Fe
Ken Caryl Ranch Water and Sanitation District	y	x	sanitary		8" line crossing C470 beneath west side of Wadsworth
Level 3	y	x	fiber optic		buried f/o east of I-25 along frontage road
Lockheed Martin	y	x	fiber optic	yes	buried f/o crossing C470 beneath eastern ROW of Kipling
Lockheed Martin	y	x	fiber optic	yes	buried f/o crossing C470 east of Wadsworth
Lockheed Martin	n	p	fiber optic	yes	buried f/o paralleling C470 southern ROW closely, attached to bridge at Platte River, crossing C470 on bridge at Santa Fe, running north and then east along County Line Rd, terminating at Southpark Terrace west of Broadway
MCI	y	x	fiber optic	yes	buried f/o east along County Line, surfacing to cross C470 in BNSF bridge east of Santa Fe, buried to south of interchange
Northern Douglas County Water and Sanitation District	n	p	sanitary		10" sewer parallels south ROW from -1750 ft east of Colorado Blvd. to Canyongate Lane
Northern Douglas County Water and Sanitation District	n	x	sanitary		12" sewer crosses C470 west of Holly
Platte Canyon Water and Sanitation District	y		sanitary		27" line runs NE, joins KCWSD 24" line paralleling ROW on north
Qwest Communications	y	x	fiber optic	yes	4'2" HDPE w/in 6" steel f/o conduit laid in the BNSF bridge on east side
Qwest Communications	y	x	fiber optic	yes	3'2" HDPE f/o crosses C470 on west side of Lucent
Qwest Local Area Network	y	x	phone		conduit for copper lines beneath north side of KenCaryl west of C470 ROW and switching to run beneath the south side of Ken Caryl east of C470 ROW

**Table 1
Utility Inventory
C470 Corridor**

Operator/Owner	In CDOT ROW	Xing/Parallel	Type	Critical	Description
Qwest Local Area Network	y	p	phone		conduit for copper lines paralleling C470 southern ROW west of Kipling, turning south at west side of Kipling
Qwest Local Area Network	y	x	phone		aerial copper lines on both west and east sides of Kipling, crossing C470
Qwest Local Area Network	y	x	fiber optic	yes	buried f/o crossing C470 at Garrison/UTE
Qwest Local Area Network	y	x	phone		conduit for copper lines crossing C470 at Garrison/UTE
Qwest Local Area Network	y	x	phone		conduit for copper lines paralleling C470 northern ROW and crossing C470 west of Carr
Qwest Local Area Network	y	x	phone		conduit for copper lines beneath each side of Carr crossing beneath C470?
Qwest Local Area Network	y	p	phone		conduit for copper lines paralleling C470 northern ROW east of Wadsworth to east of Platte Canyon
Qwest Local Area Network	y	x	phone		2 conduits for copper lines crossing C470 east of Wadsworth
Qwest Local Area Network	y	p	phone		conduit for copper lines paralleling C470 southern ROW east of Wadsworth
Qwest Local Area Network	y	x	phone		conduit for copper lines crossing C470 west of Massey Draw (between Wadsworth and Santa Fe)
Qwest Local Area Network	y	x	phone		conduit for copper lines crossing east of Platte Canyon
Qwest Local Area Network	y	x	phone		conduit for copper lines crossing east of Platte Canyon, east of previous entry
Qwest Local Area Network	y	x	phone		conduit for copper lines crossing C470 between Santa Fe and RR tracks
Qwest Local Area Network	y	x	phone		conduit for copper lines crossing C470 between RR tracks and Highline Canal
Qwest Local Area Network	y	x	phone		conduit for copper lines crossing C470 east of Santa Fe near McLellan Drive.
Qwest Local Area Network	y	x	phone		conduit for copper lines crossing beneath west side of Broadway
Qwest Local Area Network	n	p	phone		conduit for copper lines paralleling C470 northern ROW south of County Line Rd. and Broadway.
Qwest Local Area Network	y	x	phone		conduit for copper lines crossing C470 beneath the east side of Caley Circle?
Qwest Local Area Network	y	x	phone		conduit for copper lines crossing C470 east of Caley Circle
Qwest Local Area Network	y	x	phone		conduit for copper lines crossing C470 beneath east side of Daniels Park Rd.
Qwest Local Area Network	n	p	phone		conduit for copper lines paralleling C470 northern ROW east of Daniels Park Rd. to Quebec
Qwest Local Area Network	y	x	fiber optic	yes	buried f/o crossing C470 beneath west side of Quebec
Qwest Local Area Network	n	p	phone		conduit for copper lines paralleling C470 northern ROW from east of Quebec to Acres Green Rd. along Parkway Dr.
Qwest Local Area Network	y	x	phone		conduit for copper lines crossing C470 beneath west side of Acres Green Dr.
Qwest Local Area Network	n	p	phone		conduit for copper lines paralleling C470 southern ROW along Park Meadows Dr.
Qwest Local Area Network	y	x	phone		conduit for copper lines crossing C470 beneath west side of Yosemite
Qwest Local Area Network	n	p	phone		conduit for copper lines paralleling C470 northern ROW along Park Meadows Center Dr. and entering business lots near ROW
Southwest Metropolitan Water and Sanitation District	n	p	water		8" line paralleling C470 ROW on south side west of Kipling
Southwest Metropolitan Water and Sanitation District	n	p	sanitary		12" line paralleling C470 ROW on south side west of Kipling
Southwest Metropolitan Water and Sanitation District	y	x	water		16" line under east side of Kipling under C470
Southwest Metropolitan Water and Sanitation District	y	x	sanitary		8" line under east side of Kipling under C470
Southwest Metropolitan Water and Sanitation District	y	x	water		16" line crossing C470 directly beneath o/h electric, where Garrison meets C470
Southwest Metropolitan Water and Sanitation District	y	x	sanitary		8" line crossing C470 east of Garrison into north edge of neighborhood
Southwest Metropolitan Water and Sanitation District	y	x	sanitary		33" line crosses C470 west of Santa Fe, into Trailer Park cul de sac
Southwest Metropolitan Water and Sanitation District	y	x	water		12" line crosses C470 west of Santa Fe into Trailer Park, east of cul de sac
TouchAmerica	y	x	fiber optic	yes	buried f/o attached to Colo. Blvd. Bridge
TouchAmerica	y	p	fiber optic	yes	o/h f/o on Xcel transmission towers west of C470 east of hogback
US Sprint	y	x	fiber optic	yes	buried f/o backbone along UPRR tracks along Santa Fe
Willows Water and Sanitation District	y	x	water		30" line in 42" casing crossing at University
Willows Water and Sanitation District	y	x	water		30" line in 42" casing crossing -350' west of Quebec
Xcel Energy	y	p	electric	yes	Transmission lines paralleling C470 on west along Hogback (north-south portion of roadway)
Xcel Energy	y	x	electric	yes	Transmission lines cross - 1 mile west of Santa Fe
Xcel Energy	y	x	electric	yes	Transmission line crosses -1 mile west of Broadway
Xcel Energy	y	x	electric	yes	Transmission line crosses C470 on west side of Quebec
Xcel Energy	n		appurtenance	yes	Control structure and tower -1000 ft east of Colorado Blvd. South of C470; Province Center
Xcel Energy	y	x	gas	yes	6" HP main crosses C470 beneath Ken Caryl
Xcel Energy	n	p	gas		2" and 4" LP mains parallel east ROW; service to businesses north and south of Ken Caryl
Xcel Energy	n	p	gas		3" LP main parallels northeast ROW along Shaffer Pkwy between Ken Caryl and Kipling

**Table 1
Utility Inventory
C470 Corridor**

Operator/Owner	In CDOT ROW	Xing/Parallel	Type	Critical	Description
Xcel Energy	n	p	gas		Various 1.25" and 2" LP mains parallel and approach north ROW west of Kipling; service to residents
Xcel Energy	n	p	gas		4" LP main parallels and approaches south ROW along W. Toller Dr. for ~500 ft
Xcel Energy	n	p	gas		4" LP main parallels south ROW along W. Ute Ave. from W. Toller Ave. to Kipling Pkwy
Xcel Energy	n	p	gas	yes	8" HP main parallels south ROW along W. Ute Ave. from the SW to ~750 ft SW of Kipling
Xcel Energy	y	x	gas	yes	8" HP main crosses C470 @ Kipling
Xcel Energy	n		gas		3" LP main approaches south ROW, extends south along Kipling from W. Ute Ave.
Xcel Energy	n	p	gas		Various 1.25" LP mains parallel and approach south ROW; service to residents east of Kipling
Xcel Energy	n	p	gas	yes	16" HP main parallels south ROW crossing Kipling from ~750 ft SW continuing along W. Ute Ave.
Xcel Energy	y	x	gas	yes	16" HP main crosses C470 near line of Garrison
Xcel Energy	n	p	gas		1.25" LP main parallels and approaches north ROW; service to residents south of W. Ute Ave. to Wadsworth
Xcel Energy	n	p	gas		1.25" LP main parallels north ROW crossing Wadsworth from residents west to service CDOT facility on east side
Xcel Energy	y	x	gas		10" IP main crosses C470 ~2750 ft east of Wadsworth
Xcel Energy	y	p	gas		10" IP main runs within the north ROW from crossing ~2750 ft east of Wadsworth to ~500 ft west of S. Platte Rd.
Xcel Energy	n	p	gas		Various 1.25" and 2" LP mains parallel and approach north ROW west of S. Platte Rd.; service to residents
Xcel Energy	n	p	gas	yes	26" HP main approaches north ROW along Chatfield Ave.
Xcel Energy	n	p	gas	yes	20" HP main parallels north ROW from 26" main along Chatfield
Xcel Energy	n		gas		10" IP main approaches north ROW along S. Platte Rd.
Xcel Energy	y	x	gas	yes	20" HP main crosses C470 ~2750 ft east of S. Platte Rd.
Xcel Energy	y	x	gas	yes	3" HP crosses C470 west of Santa Fe overpass beneath ramps
Xcel Energy	n		gas		1.25" LP main approaches south ROW beneath center of Santa Fe
Xcel Energy	n	p	gas		Various 0.75" and 1.25" LP mains parallel and approach north ROW west of Santa Fe; service to residents
Xcel Energy	n	p	gas		4" LP main parallels north ROW along County Line Rd. from west side of Santa Fe
Xcel Energy	y	p	gas		0.75" LP main enters south ROW ~2000 ft east of Santa Fe for ~200 ft
Xcel Energy	y	x	gas		1.25 LP main crosses C470 ~200 ft west of Highline Canal crossing
Xcel Energy	n	p	gas		0.75" main parallels south ROW from ~900 ft west to ~200 ft west of Highline Canal crossing
Xcel Energy	n	p	gas		2" LP main parallels south ROW to service water treatment plant between Santa Fe and Lucent, along access road
Xcel Energy	n	p	gas	yes	24" HP main parallels south ROW approaching from the SW and extending to Barrons Blvd.
Xcel Energy	y	x	gas		2" LP main crosses C470 beneath ramps east of Lucent interchange
Xcel Energy	n		gas	yes	24" HP main approaches south ROW along Barrons Blvd.
Xcel Energy	n		gas		Major junction (valve vault??) south of ROW north of Plaza and Barrons
Xcel Energy	n	p	gas		12" IP main parallels south ROW from major junction @ Plaza and Barrons to crossing ~250 ft west of Dad Clark Gulch
Xcel Energy	y	x	gas		12" IP main crosses C470 ~250 ft west of Dad Clark Gulch
Xcel Energy	n	p	gas		12" IP main parallels north ROW from crossing ~250 ft west of Dad Clark Gulch to ~400 ft east
Xcel Energy	n	p	gas		8" IP main parallels south ROW along W. Plaza Dr.
Xcel Energy	n	p	gas		Various 2" LP mains approach and parallel north ROW west of Broadway; service to residents
Xcel Energy	n	p	gas		2" LP main parallels south ROW along Centennial Blvd. West of and crossing Broadway to continue along Dad Clark ~900 ft east of Broadway
Xcel Energy	n	p	gas		1.25" IP main approaches north ROW ~700 ft west of Broadway
Xcel Energy	n	p	gas		8" IP main parallels north ROW from Broadway to I-25 along County Line Rd. (distance from C470 varies)
Xcel Energy	n	p	gas		Various 1.25" LP mains parallel south ROW between Broadway and E. Northridge Rd.; service to residents
Xcel Energy	n	p	gas		2"/3" LP main parallels south ROW along Dad Clark Dr. from ~2500 ft west to University
Xcel Energy	n	p	gas		1.25" LP main parallels and approaches north ROW ~500 ft west of University; service to businesses
Xcel Energy	y	x	gas		6" IP main crosses C470 beneath east side of University
Xcel Energy	n	p	gas		3" LP main parallels south ROW crossing University
Xcel Energy	n	p	gas		Various 1.25" LP mains parallel north ROW between University and Colorado; service to residents
Xcel Energy	n	p	gas		Various 1.25" LP mains parallel south ROW between University and Colorado; service to residents
Xcel Energy	n		gas		4" LP main approaches south ROW along Colorado beneath west side
Xcel Energy	n		gas		6" LP main approaches north ROW along Colorado beneath west side
Xcel Energy	n	p	gas		4" LP main parallels and approaches north ROW crossing Colorado Blvd. From 6" LP main; service to businesses on east side

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Utility Inventory
C470 Corridor**

Operator/Owner	In CDOT ROW	Xing/Parallel	Type	Critical	Description
Xcel Energy	n	p	gas		1.25'/2' main parallels south ROW east of Colorado Blvd.; service to residents
Xcel Energy	n	p	gas		1.25' LP main parallels south ROW west of Big Dry Creek; service to residents
Xcel Energy	n	p	gas		2' LP main parallels south ROW east of Big Dry Creek; service to residents
Xcel Energy	n	p	gas		Various 1.25'/2'/3' LP mains approach and parallel north ROW from Holly to Quebec; service to businesses
Xcel Energy	n	p	gas		2' LP main approaches and parallels north ROW west of Quebec; service to businesses
Xcel Energy	y	x	gas		20' IP main crosses C470 beneath center of Quebec
Xcel Energy	n	p	gas		1.25'/2' LP main parallels north ROW along Parkway Dr. west of Acres Green Dr.
Xcel Energy	n	p	gas		6' LP main parallels south ROW along Park Meadows Dr. west of Acres Green Dr.
Xcel Energy	y	x	gas		8' IP main crosses C470 beneath east side of Acres Green Dr.
Xcel Energy	y	p	gas		3' LP main runs within north ROW from Acres Green Dr. east to Yosemite along Parkway Dr.
Xcel Energy	n	p	gas		3' LP main parallels south ROW from Acres Green Dr. -1250 ft east along north side of Park Meadows Dr.
Xcel Energy	n	p	gas		2' LP main parallels south ROW along south side of Park Meadows Dr. from -1250 ft east of Acres Green Dr. to -1000 ft west of Yosemite
Xcel Energy	n	p	gas		3' LP main parallels north ROW from -1500 ft NW of Yosemite and C470 intersection for -1000 ft
Xcel Energy	n	p	gas		3' LP main approaches and parallels north ROW from Yosemite east along Park Meadows Dr.
Xcel Energy	n	p	gas		Various 1.25'/2' LP mains approach and parallel south ROW east of Yosemite; service to businesses
Xcel Energy	n	p	gas		2' LP main approaches and parallels north ROW west of I-25 south of Park Meadows Center Dr.; service to businesses
Xcel Energy	y	x	gas		8' IP main crosses E470 east of I-25 along S. Valley Highway Rd.
Xcel Energy	y	p	electric		13kV UG parallels within east ROW from -150 ft south to -1750 ft north
Xcel Energy	y	x	electric		13kV UG crosses C470 on south side of Ken Cany from east to SW corner of intersection
Xcel Energy	y	x	electric		13kV UG crosses C470 from west of southern off ramp to west of southern on ramp
Xcel Energy	y	p	electric		13kV UG parallels within west ROW from west of southern on ramp to -1500 ft north
Xcel Energy	n	p	electric		4x13kV UG parallel south ROW along W. Ute Ave. to -175 ft west to Kipling
Xcel Energy	n		electric		Deer Creek compressor station south of W. Ute Ave. and -1000 ft west of S. Kipling
Xcel Energy	n		electric		13kV UG approaches south ROW along W. Toller Dr.
Xcel Energy	y	x	electric		2x13kV UG cross C470 on west side of Kipling
Xcel Energy	y	x	electric		13kV UG crosses C470 on east side of Kipling
Xcel Energy	n	p	electric		13kV UG parallels south ROW from -175 ft west of Kipling along W. Ute Ave. to C470
Xcel Energy	n		electric		13kV UG approaches south ROW at the SE corner of Kipling/C470 service to JeffCo Maintenance Facility
Xcel Energy	y	x	electric		13kV OH crosses C470 from W. Ute Ave. to Garrison
Xcel Energy	n		electric		13kV OH/UG continues from C470 north along Garrison on west side
Xcel Energy	n		electric		13kV UG approaches north ROW on west side of Garrison service to JeffCo pool
Xcel Energy	n	p	electric		13kV OH parallels north ROW for -700 ft east from crossing at Garrison
Xcel Energy	n		electric		13kV OH approaches north ROW along W. Ute Ave. from -700 ft east of Garrison crossing
Xcel Energy	n	p	electric		Various UG 13kV lines along south ROW from Garrison crossing to -1125 ft service residents
Xcel Energy	n	p	electric		13kV UG parallels north ROW between Garrison and Carr service to residents
Xcel Energy	y	x	electric		13kV OH crossing C470 at Carr St.
Xcel Energy	n	p	electric		Various OH/UG 13kV lines approach and parallel north ROW between Wadsworth and Carr St. service to residents
Xcel Energy	y	p	electric		2x13kV UG parallel south ROW from south on Wadsworth to crossing at east ramps of Wads/C470 intersection
Xcel Energy	y	x	electric		2x13kV UG cross C470 at east ramps of C470/Wadsworth
Xcel Energy	y	x	electric		13kV OH crossing C470 -500 ft east of Wadsworth ramp crossing
Xcel Energy	n	p	electric		13kV UG parallels north ROW from bike path east to -100 ft west of SW corner of CDOT facility located on NE corner of Wadsworth/C470
Xcel Energy	n	p	electric		13kV UG parallels north ROW from CDOT facility to Wadsworth ramp crossing
Xcel Energy	y	p	electric		13kV OH parallels north ROW from Wadsworth ramp crossing to -200 ft east of W. San Juan Pl.
Xcel Energy	y	x	electric		13kV OH crossing C470 -200 ft east of San Juan Pl.
Xcel Energy	n		electric		Various 13kV OH/UG approach north ROW between Payne Ave./W. San Juan Pl. and Chatfield Ave. service to residents
Xcel Energy	y	p	electric		13kV OH parallels north ROW from -900 ft west of junction of Chatfield Ave./S. Platte Rd. east -1675 ft
Xcel Energy	n	p	electric		13kV OH parallels north ROW approaching along Chatfield Ave. and continuing to Santa Fe
Xcel Energy	n		electric		2x13kV UG approaching north ROW along S. Platte Rd.

**Table 1
Utility Inventory
C470 Corridor**

Operator/Owner	In CDOT ROW	Xing/Parallel	Type	Critical	Description
Xcel Energy	y	p	electric		13kV UG parallels north ROW from -750 west of Santa Fe for -600 ft
Xcel Energy	y	x	electric		13kV OH crosses C470 along west side of Santa Fe
Xcel Energy	y		electric		13kV UG approaches north ROW along west side of Santa Fe
Xcel Energy	n	p	electric		2x13kV UG parallel north ROW along County Line @ Santa Fe to junction on NE corner
Xcel Energy	n		electric		Major junction NE corner of County Line Rd. and Santa Fe
Xcel Energy	n	p	electric		2x13kV UG parallels north ROW along County Line Rd. from junction at NE corner of County Line and Santa Fe
Xcel Energy	n	p	electric		13kV UG approaches and parallels north ROW -750 ft from -800 ft east of Santa Fe service to residents
Xcel Energy	y	x	electric		13kV UG crossing C470 just west of Highline Canal crossing east of Santa Fe
Xcel Energy	n	p	electric		13kV OH approaches and parallels south ROW for -600 ft west from crossing near Highline Canal
Xcel Energy	n	p	electric		13kV UG parallels south ROW for -1000 ft from crossing at line of access road for Centennial district Joseph P. Blake water treatment facility
Xcel Energy	y	x	electric		2x13kV UG crossing C470 at line of access road for Joseph P. Blake water treatment facility
Xcel Energy	y	p	electric		13kV UG parallels north ROW from crossing at water treatment facility east to end of east ramp at Lucent
Xcel Energy	y	p	electric		13kV UG/OH parallels south ROW from crossing near water treatment plant to end of east ramps at Lucent
Xcel Energy	n	p	electric		13kV UG approach and parallel north ROW along west ROW of Lucent
Xcel Energy	n		electric		13kV UG approaches north ROW along east side of Lucent
Xcel Energy	n	p	electric		Various 13kV UG approach and parallel south ROW between Lucent and Broadway service to businesses and residents
Xcel Energy	y		electric		13kV approaches and enters north ROW along east curve of Highline Canal between Broadway and Lucent
Xcel Energy	n	p	electric		13kV UG approaches and parallels between Highline Canal and Broadway
Xcel Energy	n	p	electric		4x13kV UG parallel north ROW south of County Line east to -125 ft west of E. Phillips Ave.
Xcel Energy	y	x	electric		3x13kV UG crosses C470 along east portion of Broadway
Xcel Energy	y	x	electric		13kV UG crosses C470 beneath west portion of Broadway
Xcel Energy	n	p	electric		13kV OH parallels south ROW between Broadway and University service to businesses and residents
Xcel Energy	n	p	electric		13kV OH parallels north ROW along County Line from -125 ft west of E. Phillips Ave. to -500 ft west of Holly
Xcel Energy	y	p	electric		13kV UG parallels north ROW for -1050 ft east from -200 ft west of line of Ogden Circle (north of C470)
Xcel Energy	y	p	electric		13kV UG parallels and enters north ROW from -1750 ft west to University Blvd. Service to businesses
Xcel Energy	y	x	electric		2x13kV UG cross C470 along west side of University
Xcel Energy	y	x	electric		13kV UG crosses C470 along east side of University
Xcel Energy	n	p	electric		Various 13kV UG parallel south ROW between University and Colorado service to residents
Xcel Energy	n	p	electric		Various 13kV UG approach and parallel north ROW between University and Colorado service to businesses and residents
Xcel Energy	y	x	electric		13kV OH crosses C470 -halfway between University and Colorado
Xcel Energy	n	p	electric		13kV UG parallels south ROW from -1250 ft west to Colorado
Xcel Energy	y	x	electric		13kV UG crosses C470 along east side of Colorado
Xcel Energy	y		electric		2x13kV UG approach and enter north ROW along east side of Colorado
Xcel Energy	n		electric		2x13kV UG approach north ROW along west side of Colorado
Xcel Energy	n		electric		Major junction (5x13kV) on east side of Colorado -700 ft north of C470
Xcel Energy	y	p	electric		13kV UG parallels north ROW from Colorado to -2500 ft east
Xcel Energy	n	p	electric		13kV UG parallel south ROW from Colorado east -325 ft service to comm. Tower
Xcel Energy	n		electric		Comm. Tower -325 east of Colorado and -150 ft south of C470
Xcel Energy	n	p	electric		Various 13kV UG approach and parallel south ROW between Colorado and Quebec service to businesses and residents
Xcel Energy	y	p	electric		Various 13kV UG approach and parallel north ROW between Holly and Quebec service to businesses
Xcel Energy	y	x	electric		13kV UG crosses C470 -1250 ft west of Quebec
Xcel Energy	y	x	electric		3x13kV UG cross C470 along east side of Quebec
Xcel Energy	n	p	electric		13kV UG parallels north ROW from Quebec east -1500 ft
Xcel Energy	n	p	electric		Various 13kV UG approach and parallel south ROW between Quebec and Acres Green
Xcel Energy	n	p	electric		13kV UG parallels north ROW between Quebec and Acres Green
Xcel Energy	y	x	electric		4x13kV UG cross C470 along east portion of Acres Green
Xcel Energy	y	p	electric		2x13kV UG parallel north ROW along south portion of Parkway Dr. from Acres Green to Yosemite
Xcel Energy	n	p	electric		13kV UG parallel north ROW along north portion of Parkway Dr. from Acres Green to Yosemite

**Table 1
Utility Inventory
C470 Corridor**

Operator/Owner	In CDOT ROW	Xing/Parallel	Type	Critical	Description
Xcel Energy	y	x	electric		13kV UG crosses C470 at Willow Creek
Xcel Energy	y	p	electric		13kV UG parallels south ROW from crossing at Willow Creek to ~1000 ft east of Yosemite/C470
Xcel Energy	y	x	electric		13kV UG crosses C470 ~675 ft east of crossing at Willow Creek
Xcel Energy	n	p	electric		13kV UG parallels north ROW from Parkway Dr. ~500 ft east to crossing between Willow Creek and Yosemite
Xcel Energy	n	p	electric		13kV UG parallels north ROW from Parkway Dr. east ~1500 ft service to businesses
Xcel Energy	n	p	electric		13kV UG approaches and parallels north ROW from ~700 ft west to Yosemite service to businesses
Xcel Energy	y	x	electric		13kV UG crosses C470 along west side of Yosemite
Xcel Energy	n		electric		Major junction (6x13kV) ~175 ft north of C470 and ~15 ft west of Yosemite
Xcel Energy	y	p	electric		13kV UG parallels south ROW from Yosemite crossing west ~500 ft
Xcel Energy	y	p	electric		Various 13kV UG approach and parallel south ROW from Yosemite to I-25 service to businesses
Xcel Energy	y	p	electric		13kV UG parallels north ROW from Yosemite east ~200 ft
Xcel Energy	n	p	electric		4x13kV UG parallels north ROW along Park Meadows Center Dr.
Xcel Energy	n	p	electric		Various 13kV UG approach and parallel north ROW between Park Meadows Center Dr. and I-25 service to businesses
Xcel Energy	y	p	electric		13kV UG parallels north-bound on ramp to I-25 from east-bound C470 on north side
Xcel Energy	y	x	electric		13kV UG crossing north-bound on ramp to I-25 from east-bound C470 ~1150 ft east of divergence of on ramp from C470
Xcel Energy	y	p	electric		13kV UG parallels north-bound on ramp to I-25 from east-bound C470 from ~500 ft east of north and south-bound ramp divergence point to point where on ramp converges with north-bound on ramp from west bound E470
Xcel Energy	y	p	electric		13kV UG parallels previous for ~700 ft from point of divergence
Xcel Energy	y	x	electric		13kV UG approaches from west and crosses south-bound I-25 to east-bound E470 interchange proceeding east ~450 ft
Xcel Energy	y	x	electric		13kV UG approaches from south and crosses west-bound E470 to north I-25 interchange proceeding north
Xcel Energy	y	p	electric		13kV UG parallels north ROW along the west-bound E470 to north-bound I-25 interchange to point where S. Valley Hwy. Rd. parallels I-25
Xcel Energy	y	x	electric		Various 13kV UG cross E470 between I-25 and end of east ramps
Xcel Energy	y	x	electric		2x13kV cross E470 at the end of the east ramps at I-15/E470 along west side of S. Valley Hwy. Rd.
XO of Colorado	y	x	fiber optic	yes	buried f/o paralleling Yosemite on the east side beneath C470

Table 2b
Potential Impacts to Utilities from Express Lane Alternative

C470 Corridor

Utilities Identified with Potential for Impacts from the C470 Recommended Alternative

Kipling to Santa Fe

Utility Owner	Type	buried or overhead	Station	Utility Location	Potential Impact
Lockheed Martin	critical fiber optics	buried	691+25	N-S in east R.O.W. of Kipling	C470 Overpass support
Comcast	fiber optic cable	overhead	715+25	crossing C470 at Garrison, on Xcel poles	possible pole relocation(s)*
Xcel	HP gas	buried	715+25	crossing C470 at Garrison	C470 roadway/R.O.W.
Qwest Local Area Network	fiber optic communications	buried	718+50	crossing C470 at Ute	C470 roadway/R.O.W.
Denver Water	90" raw water main	buried	775+00	crossing C470 at Wadsworth, east ramps	C470 roadway/R.O.W.
Lockheed Martin	critical fiber optics	buried	783+90	crossing C470, east of Wadsworth	C470 roadway/R.O.W.
Lockheed Martin	critical fiber optics	buried	790+00 to 804+00	parallels south C470 within areas of proposed footprint between Wadsworth and Platte Canyon	C470 roadway/R.O.W.
Xcel	HP gas	buried	879+10	parallels north C470 R.O.W. and crosses C470 at gravel pit between Platte Canyon and Santa Fe; HP line continues east ~500 ft beyond crossing	C470 roadway/R.O.W.
Lockheed Martin	critical fiber optics	buried	832+00 to 931+90	parallels south C470 R.O.W. between Platte Canyon and Santa Fe	C470 roadway/R.O.W.
Xcel	electric transmission	overhead	894+50	crosses C470 at Platte River Greenway	possible pole relocation(s)

* Xcel owns poles and electrical distribution may be impacted, although not considered a major utility.

Table 2b
Potential Impacts to Utilities from Express Lane Alternative

C470 Corridor

Santa Fe

Utility Owner	Type	buried or overhead	Station	Utility Location	Potential Impact
City of Englewood	ditch (City Ditch)	buried	929+50	crosses C470 at Santa Fe, west ramps	Santa Fe overpass support/ C470 roadway/R.O.W.
Comcast	fiber optic cable	buried	929+90	crosses C470 at Santa Fe, west ramps	Santa Fe overpass support/ C470 roadway/R.O.W.
Xcel	HP gas	buried	927+10	n-s on west side of Snata Fe north of C470, in southbound lanes south of C470, crosses C470 at Santa Fe, west ramps	Santa Fe overpass support/ C470 roadway/R.O.W.
Comcast	fiber optic cable	buried	931+30	n-s in southbound lanes of Santa Fe, crosses C470 at Santa Fe, attached to bridge	Santa Fe overpass modifications
Lockheed Martin	critical fiber optics	buried	931+90	crosses C470 at Santa Fe, attached to bridge	Santa Fe overpass modifications
US Sprint	fiber optic communications	buried	936+00	crosses C470 on UPRR bridge (western-most track)	UPRR bridge modifications
MCI	fiber optic communications	buried	937+05	crosses C470 on BNSF bridge (eastern-most track)	BNSF bridge modifications
Qwest Communications	critical fiber optics	buried	937+05	crosses C470 on BNSF bridge (eastern-most track)	BNSF bridge modifications

Santa Fe to University

Utility Owner	Type	buried or overhead	Station	Utility Location	Potential Impact
Comcast	fiber optic cable	buried	960+00	parallels C470 on south side within proposed footprint, on Xcel poles	C470 roadway/R.O.W.
Comcast	fiber optic cable	overhead	961+65	crosses C470 at Highline Canal tunnel	C470 roadway/R.O.W.
Denver Water	ditch (Highline Canal)	n/a	963+15	crosses C470 between Santa Fe and Lucent	C470 roadway/R.O.W.
Comcast	fiber optic cable	buried	976+95	crosses C470 between Highline Canal and Lucent	C470 roadway/R.O.W.
Qwest Communications	critical fiber optics	buried	1004+95	crosses C470 on west side of Lucent overpass	Lucent overpass modifications/ C470 roadway/R.O.W.

Table 2b
Potential Impacts to Utilities from Express Lane Alternative

C470 Corridor

Xcel	electric transmission	overhead	1040+00	crosses C470 west of Broadway	possible pole relocation(s)
Comcast	fiber optic cable	buried	1068+10	crosses C470 under Broadway	C470 overpass support
Denver Water	108" water main	buried	1140+50	crosses C470 at University, west ramps; parallels north R.O.W. to east ramps	C470 roadway/R.O.W.
Comcast	fiber optic cable	buried	1147+25	crosses C470 under University	C470 overpass support

University to I-25

Utility Owner	Type	buried or overhead	Station	Utility Location	Potential Impact
Denver Water	60" water main	buried	1160+45	crosses C470 at University under east ramps; parallels south R.O.W. to Colorado	C470 roadway/R.O.W.
Touch America*	fiber optic communications	buried	1201+30	crosses C470 in bridge at Colorado Blvd.	Colorado overpass modifications
Northern Douglas County Water and Sanitation District	sanitary sewer	buried	1235+00	barely enters footprint on south side, at Dry Creek; golf course	C470 roadway/R.O.W.
Denver Water	60" water main	buried	1245+00 to 1307+50	parallels C470 on south side entering and exiting footprint in several locations from Dry Creek Golf Course to Quebec	C470 roadway/R.O.W.
Denver Water	60" water main	buried	1298+45	crosses C470 at Quebec, west ramps	C470 roadway/R.O.W.
Qwest Local Area Network	fiber optic communications	buried	1309+50	crosses C470 at Quebec	Quebec overpass modification/ C470 roadway/R.O.W.
Xcel	electric transmission	overhead	1308+75	crosses C470 at Quebec	possible pole relocation(s)
Comcast	2 fiber optic cable runs	buried	1384+50	crosses C470 under Yosemite	C470 overpass support
XO Communications	fiber optic communications	buried	1384+75	crosses C470 under Yosemite	C470 overpass support

*now owned by 360Networks

Table 2a
Potential Impacts to Utilities from General Purpose Lane Alternative

C470 Corridor

Utilities Identified with Potential for Impacts from the C470 Recommended Alternative

Kipling to Santa Fe

Utility Owner	Type	buried or overhead	Station	Utility Location	Potential Impact
Lockheed Martin	critical fiber optics	buried	691+25	N-S in east R.O.W. of Kipling	C470 Overpass support
Comcast	fiber optic cable	overhead	715+25	crossing C470 at Garrison, on Xcel poles	possible pole relocation(s)*
Xcel	HP gas	buried	715+25	crossing C470 at Garrison	C470 roadway/R.O.W.
Qwest Local Area Network	fiber optic communications	buried	718+50	crossing C470 at Ute	C470 roadway/R.O.W.
Denver Water	90" raw water main	buried	775+00	crossing C470 at Wadsworth, east ramps	C470 roadway/R.O.W.
Lockheed Martin	critical fiber optics	buried	783+90	crossing C470, east of Wadsworth	C470 roadway/R.O.W.
Lockheed Martin	critical fiber optics	buried	790+00 to 804+00	parallels south C470 within areas of proposed footprint between Wadsworth and Platte Canyon	C470 roadway/R.O.W.
Xcel	HP gas	buried	879+10	parallels north C470 R.O.W. and crosses C470 at gravel pit between Platte Canyon and Santa Fe; HP line continues east ~500 ft beyond crossing	C470 roadway/R.O.W.
Lockheed Martin	critical fiber optics	buried	832+00 to 931+90	parallels south C470 R.O.W. between Platte Canyon and Santa Fe	C470 roadway/R.O.W.
Xcel	electric transmission	overhead	894+50	crosses C470 at Platte River Greenway	possible pole relocation(s)

* Xcel owns poles and electrical distribution may be impacted, although not considered a major utility.

Table 2a
Potential Impacts to Utilities from General Purpose Lane Alternative

C470 Corridor

Santa Fe

Utility Owner	Type	buried or overhead	Station	Utility Location	Potential Impact
City of Englewood	ditch (City Ditch)	buried	929+50	crosses C470 at Santa Fe, west ramps	Santa Fe overpass support/ C470 roadway/R.O.W.
Comcast	fiber optic cable	buried	929+90	crosses C470 at Santa Fe, west ramps	Santa Fe overpass support/ C470 roadway/R.O.W.
Xcel	HP gas	buried	927+10	n-s on west side of Snata Fe north of C470, in southbound lanes south of C470, crosses C470 at Santa Fe, west ramps	Santa Fe overpass support/ C470 roadway/R.O.W.
Comcast	fiber optic cable	buried	931+30	n-s in southbound lanes of Santa Fe, crosses C470 at Santa Fe, attached to bridge	Santa Fe overpass modifications
Lockheed Martin	critical fiber optics	buried	931+90	crosses C470 at Santa Fe, attached to bridge	Santa Fe overpass modifications
US Sprint	fiber optic communications	buried	936+00	crosses C470 on UPRR bridge (western-most track)	UPRR bridge modifications
MCI	fiber optic communications	buried	937+05	crosses C470 on BNSF bridge (eastern-most track)	BNSF bridge modifications
Qwest Communications	critical fiber optics	buried	937+05	crosses C470 on BNSF bridge (eastern-most track)	BNSF bridge modifications

Santa Fe to University

Utility Owner	Type	buried or overhead	Station	Utility Location	Potential Impact
Comcast	fiber optic cable	buried	960+00	parallels C470 on south side within proposed footprint, on Xcel poles	C470 roadway/R.O.W.
Comcast	fiber optic cable	overhead	961+65	crosses C470 at Highline Canal tunnel	C470 roadway/R.O.W.
Denver Water	ditch (Highline Canal)	n/a	963+15	crosses C470 between Santa Fe and Lucent	C470 roadway/R.O.W.
Comcast	fiber optic cable	buried	976+95	crosses C470 between Highline Canal and Lucent	C470 roadway/R.O.W.

Table 2a
Potential Impacts to Utilities from General Purpose Lane Alternative

C470 Corridor

Qwest Communications	critical fiber optics	buried	1004+95	crosses C470 on west side of Lucent overpass	Lucent overpass modifications/ C470 roadway/R.O.W.
Xcel	electric transmission	overhead	1040+00	crosses C470 west of Broadway	possible pole relocation(s)
Comcast	fiber optic cable	buried	1068+10	crosses C470 under Broadway	C470 overpass support
Denver Water	108" water main	buried	1140+50	crosses C470 at University, west ramps; parallels north R.O.W. to east ramps	C470 roadway/R.O.W.
Comcast	fiber optic cable	buried	1147+25	crosses C470 under University	C470 overpass support

University to I-25

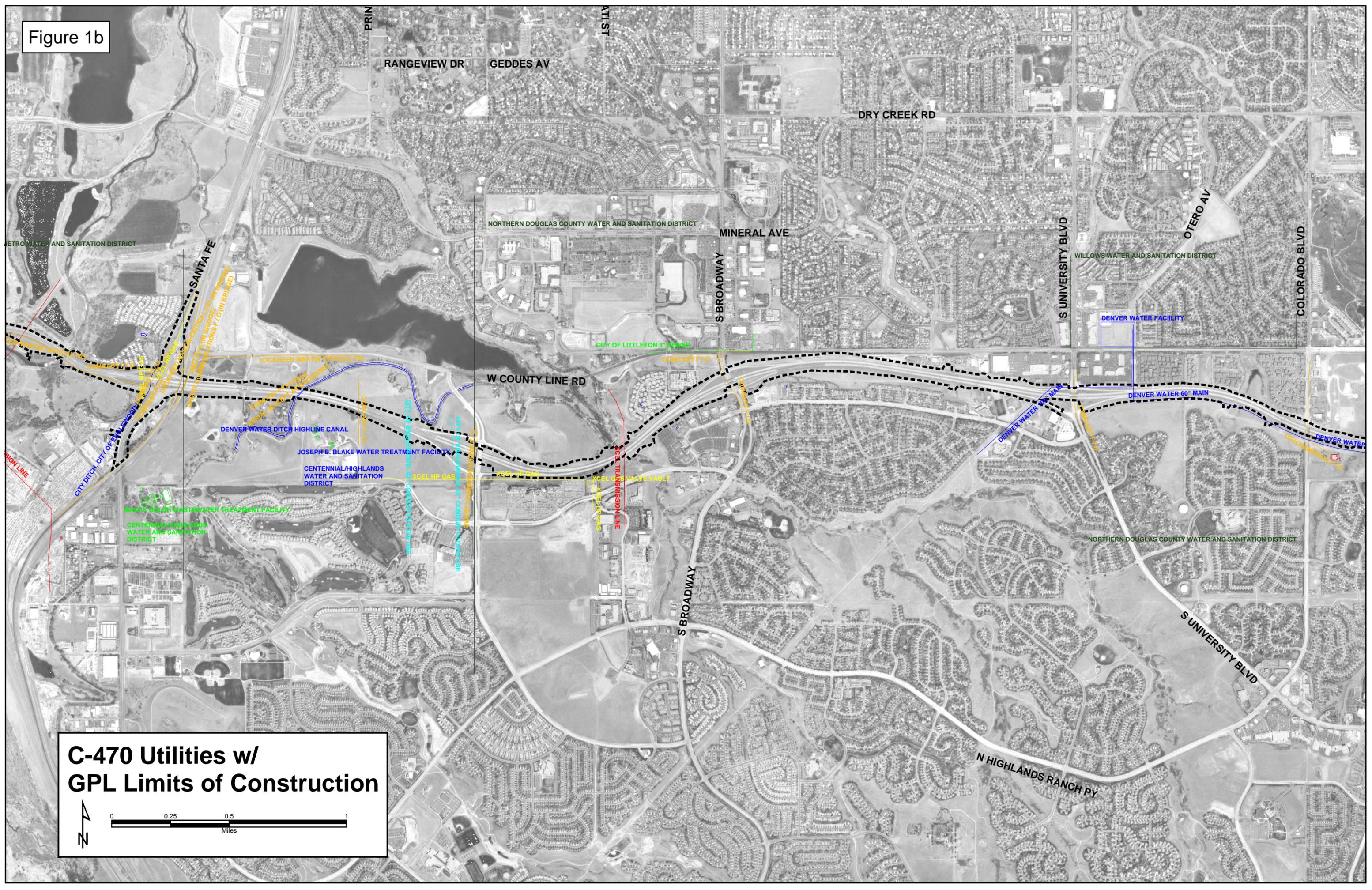
Utility Owner	Type	buried or overhead	Station	Utility Location	Potential Impact
Denver Water	60" water main	buried	1160+45	crosses C470 at University under east ramps; parallels south R.O.W. to Colorado	C470 roadway/R.O.W.
Touch America*	fiber optic communications	buried	1201+30	crosses C470 in bridge at Colorado Blvd.	Colorado overpass modifications
Northern Douglas County Water and Sanitation District	sanitary sewer	buried	1235+00	barely enters footprint on south side, at Dry Creek; golf course	C470 roadway/R.O.W.
Denver Water	60" water main	buried	1245+00 to 1307+50	parallels C470 on south side entering and exiting footprint in several locations from east of University to Quebec	C470 roadway/R.O.W.
Denver Water	60" water main	buried	1298+45	crosses C470 at Quebec, west ramps	C470 roadway/R.O.W.
Qwest Local Area Network	fiber optic communications	buried	1309+50	crosses C470 at Quebec	Quebec overpass modification/ C470 roadway/R.O.W.
Xcel	electric transmission	overhead	1308+75	crosses C470 at Quebec	possible pole relocation(s)
Comcast	2 fiber optic cable runs	buried	1384+50	crosses C470 under Yosemite	C470 overpass support
XO Communications	fiber optic communications	buried	1384+75	crosses C470 under Yosemite	C470 overpass support

*now owned by 360Networks

**Table 3
Major Utility Inventory
C470 Corridor**

Operator/Owner	in CDOT ROW	Xing/Parallel	Type	Description
Adestra Communications	y	x	fiber optic	4"6" fto conduits, buried, parallel to I-25 (east ROW)
City of Englewood	y	x	ditch	"City Ditch" crosses @ Santa Fe
Comcast	y	x	cable	4" buried CATV trunk line north of Ken Caryl
Comcast	y	x	fiber/cable	2" buried fiber cable conduit in median of Ken Caryl
Comcast	y	x	fiber/cable	aerial fiber east of Kipling on Xcel poles; goes up just south of ROW, heads north along Garrison
Comcast	y	x	fiber optic	2 buried fto conduits crossing C470 beneath center and east side of Yosemite
Comcast	y	x	fiber optic	buried fto crossing C470 beneath center of University
Comcast	n	p	fiber optic	buried fto paralleling County Line on the south side north of Broadway/C470 interchange
Comcast	y	x	fiber optic	buried fto crosses C470 beneath west side of Broadway
Comcast	y	x	fiber optic	buried fto crossing C470 ~1/2 mile west of Lucent
Comcast	y	x	fiber/cable	aerial fto-cable cluster to north and south of C470 ROW, buried crossing C470 along tunnel for Highline Canal Trail near Santa Fe, also buried cable component heads east paralleling ROW to south
Comcast	n	p	fiber/cable	buried fto-cable cluster paralleling C470 northern ROW servicing trailer park
Comcast	y	x	fiber optic	buried fto crossing C470 west of Santa Fe, along City Ditch
Comcast	y	x	fiber optic	buried fto crossing C470 into bridge at Santa Fe
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n		appurtenance	Joseph B. Blake Water Treatment Facility between Santa Fe and Lucent south of C470
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n		appurtenance	Big Dry Creek Lift Station just west of "The Links" golf course
Centennial Water and Sanitation District/Highlands Ranch Metropolitan District	n		appurtenance	Marcy Gulch Wastewater Treatment Facility south of C470 and east of Santa Fe, outside of CAD map coverage
Denver Water	y	x	water	90" line crosses at Wadsworth, parallels Wads. On east side to south and trends to northeast north of C470
Denver Water	y	x	ditch	Hi-Line Canal crossing east of Santa Fe, approaches north ROW further east
Denver Water	y	x	water	108" line crossing west of University
Denver Water	y	x	water	60" line crossing east of University (in west interchange area)
Denver Water	y	p	water	60" main paralleling south ROW to Quebec, enters ROW in some areas
Denver Water	y	x	water	60" line crossing west of Quebec
Lockheed Martin	y	x	fiber optic	buried fto crossing C470 beneath eastern ROW of Kipling
Lockheed Martin	y	x	fiber optic	buried fto crossing C470 east of Wadsworth
Lockheed Martin	n	p	fiber optic	buried fto paralleling C470 southern ROW closely attached to bridge at Platte River, crossing C470 on bridge at Santa Fe, running north and then east along County Line Rd, terminating at Southpark Terrace west of Broadway
MCI	y	x	fiber optic	buried fto east along County Line, surfacing to cross C470 in BNSF bridge east of Santa Fe, buried to south of interchange
Qwest Communications	y	x	fiber optic	4"2" HDPE w/in 6" steel fto conduit laid in the BNSF bridge on east side
Qwest Communications	y	x	fiber optic	3"2" HDPE fto crosses C470 on west side of Lucent
Qwest Local Area Network	y	x	fiber optic	buried fto crossing C470 at Garrison/Usa
Qwest Local Area Network	y	x	fiber optic	buried fto crossing C470 beneath west side of Quebec
TouchAmerica	y	x	fiber optic	buried fto attached to Colo. Blvd. Bridge
TouchAmerica	y	p	fiber optic	oh fto on Xcel transmission towers west of C470 east of hogback
US Sprint	y	x	fiber optic	buried fto backbone along LPRR tracks along Santa Fe
Xcel Energy	y	p	electric	Transmission lines paralleling C470 on west along Hogback (north-south portion of roadway)
Xcel Energy	y	x	electric	Transmission lines cross ~ 1 mile west of Santa Fe
Xcel Energy	y	x	electric	Transmission line crosses ~1 mile west of Broadway
Xcel Energy	y	x	electric	Transmission line crosses C470 on west side of Quebec
Xcel Energy	n		appurtenance	Control structure and tower ~1000 ft east of Colorado Blvd. South of C470, Province Center
Xcel Energy	y	x	gas	6" HP main crosses C470 beneath Ken Caryl
Xcel Energy	n	p	gas	8" HP main parallels south ROW along W. Usa Ave. from the SW to ~750 ft SW of Kipling
Xcel Energy	y	x	gas	8" HP main crosses C470 @ Kipling
Xcel Energy	n	p	gas	16" HP main parallels south ROW crossing Kipling from ~750 ft SW continuing along W. Usa Ave.
Xcel Energy	y	x	gas	16" HP main crosses C470 near line of Garrison
Xcel Energy	n		gas	26" HP main approaches north ROW along Chaffield Ave.
Xcel Energy	n	p	gas	20" HP main parallels north ROW from 26" main along Chaffield
Xcel Energy	y	x	gas	20" HP main crosses C470 ~2750 ft east of S. Platte Rd.
Xcel Energy	y	x	gas	3" HP crosses C470 west of Santa Fe overpass beneath ramps
Xcel Energy	n	p	gas	24" HP main parallels south ROW approaching from the SW and extending to Barrons Blvd.
Xcel Energy	n		gas	24" HP main approaches south ROW along Barrons Blvd.
XO of Colorado	y	x	fiber optic	buried fto paralleling Yosemite on the east side beneath C470

Figure 1b



C-470 Utilities w/ GPL Limits of Construction

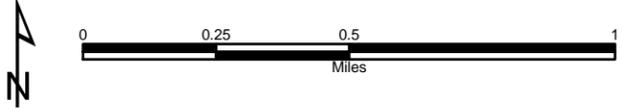
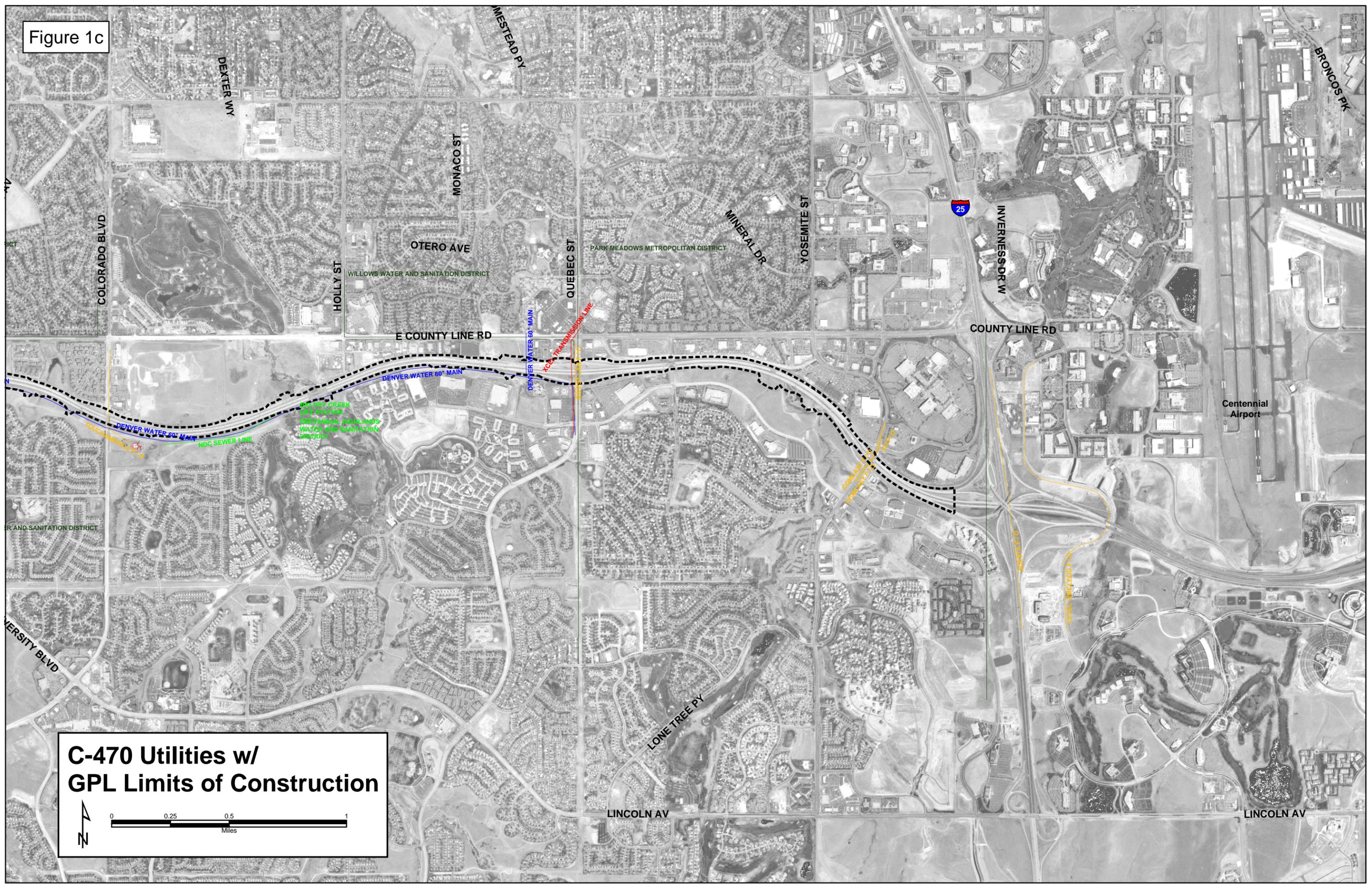


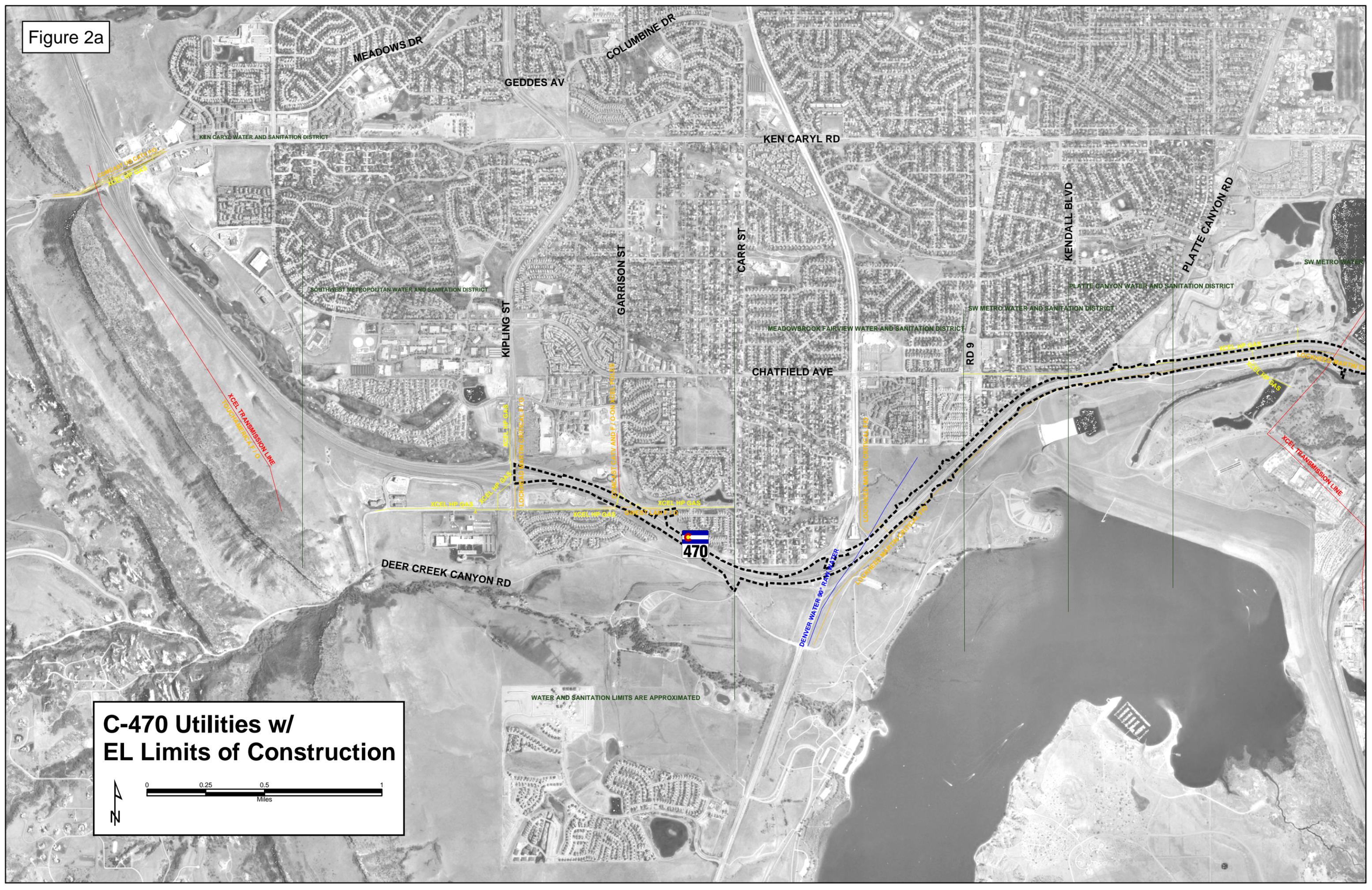
Figure 1c



**C-470 Utilities w/
GPL Limits of Construction**



Figure 2a

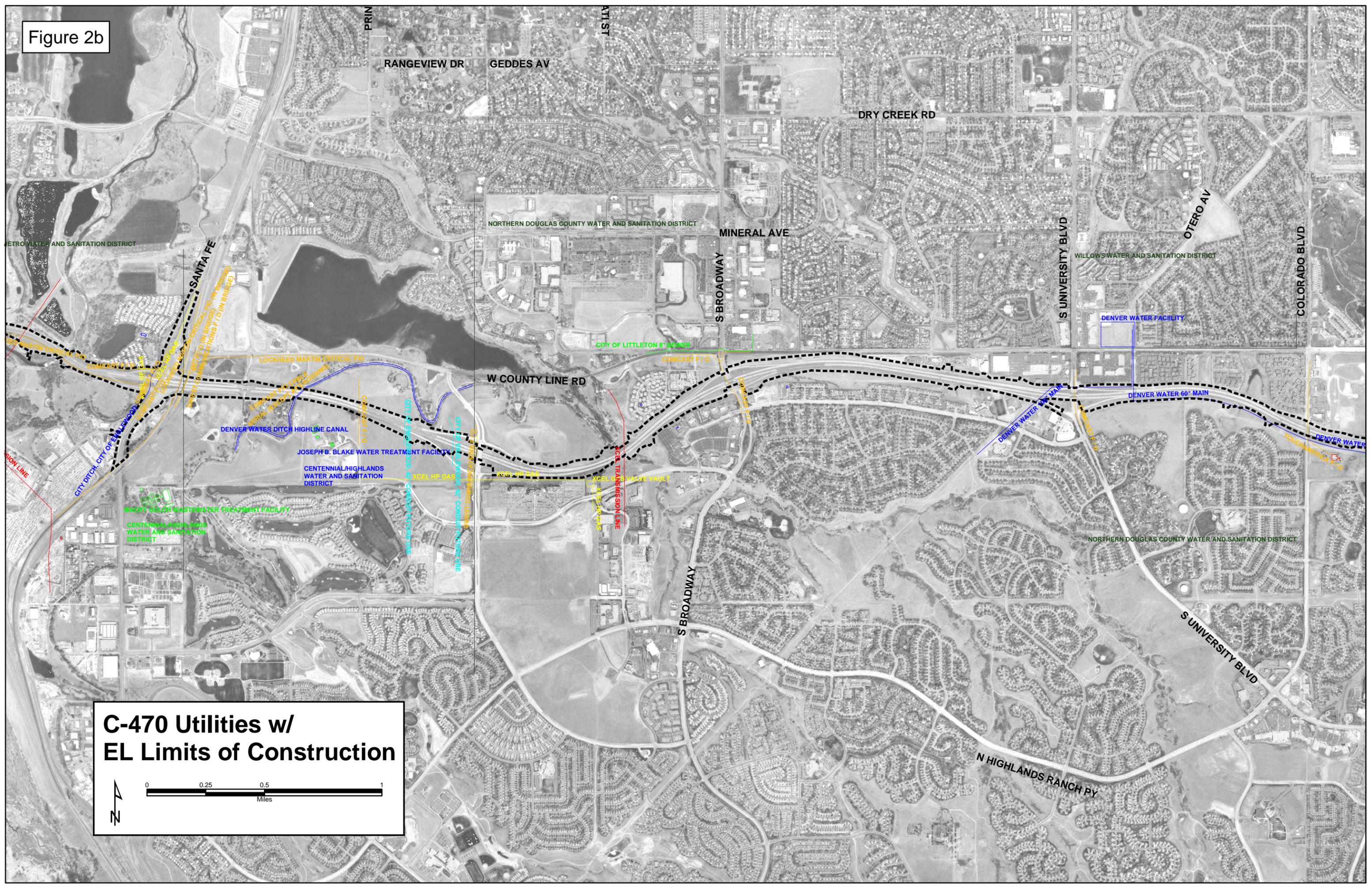


**C-470 Utilities w/
EL Limits of Construction**

0 0.25 0.5 1
Miles

A north arrow is located to the left of the scale bar. The scale bar is marked with 0, 0.25, 0.5, and 1 mile.

Figure 2b

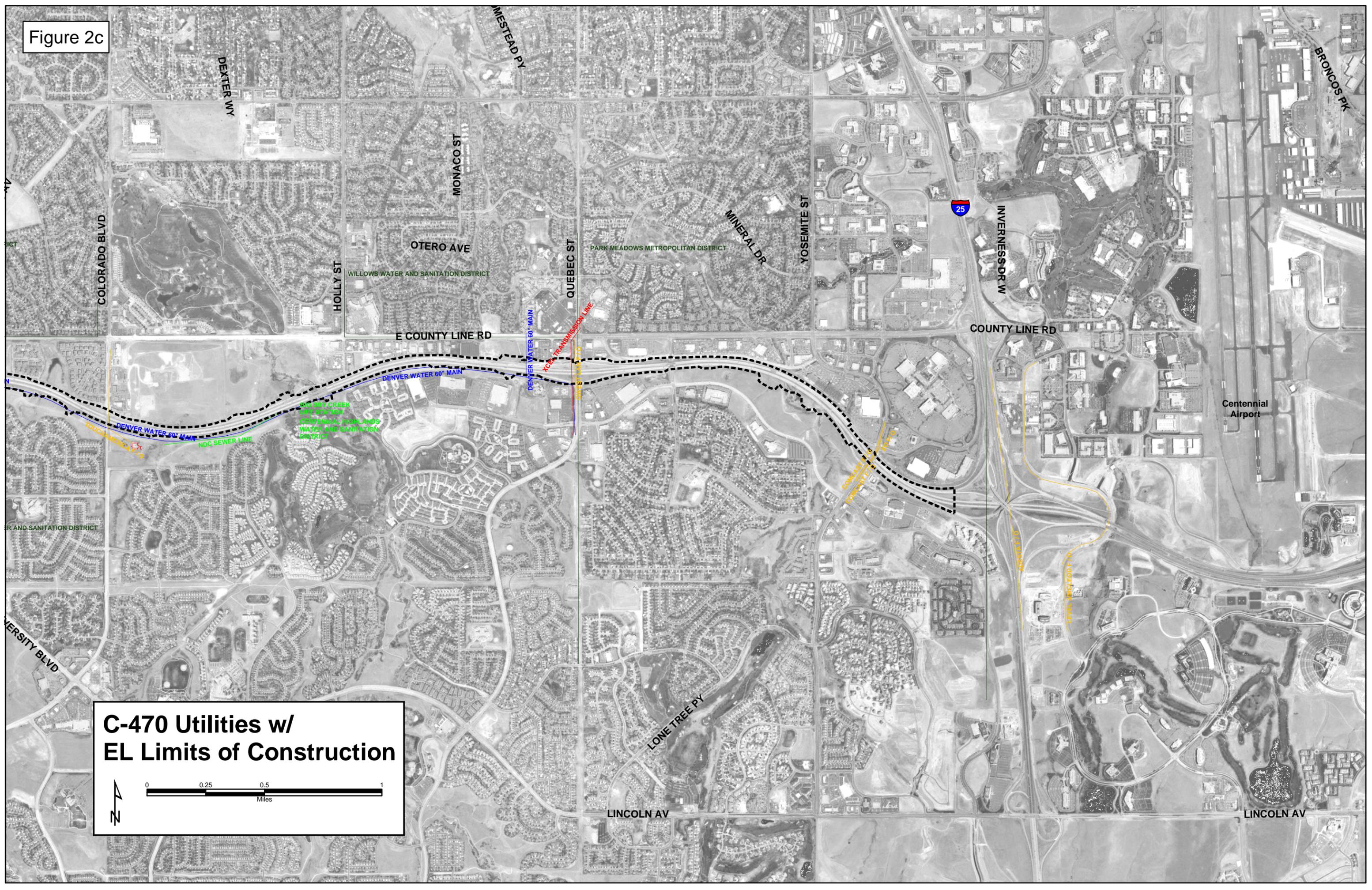


**C-470 Utilities w/
EL Limits of Construction**

0 0.25 0.5 1
Miles

N

Figure 2c



C-470 Utilities w/ EL Limits of Construction

