OPTION A - IDENTIFIED ROUTES

N
W E
S

2,500 1,250 0 2,500
Feet

Legend

Option A - Identified Routes

- Mill Creek to Perche
- Mill Creek to Grindstone
- Mill Creek to McBaine
- Existing 69kV
- Trails
- Parks
- Substation

Perche

Hinkson Creek

Grindstone

Mill Creek

McBaine

COLUMBIA WATER & LIGHT

Sega

ENGINEERING & TECHNICAL SERVICES

DIAGRAM A

Perche Substation

Hinkson Cr. Substation

Mill Creek Substation

Grindstone Substation

McBaine Substation

CHAPEL HILL RD.

NIFONG BLVD.

SCOTT BLVD.

OLD MILL CREEK RD.

SINCLAIR RD.

FORUM BLVD.

STRAWN RD.

PROVIDENCE RD.

GREEN MEADOWS RD.

GRINDSTONE PKWY.

ROCK QUARRY RD.

OLD HWY. 63 S.

NEW HAVEN RD.

US HWY. 63

BEARFIELD RD.

HOWARD ORCHARD RD.

RTE. K

RTE. KK

BETHEL ROAD

OLD PLANK ROAD

RTE. 163

not to scale

Legend

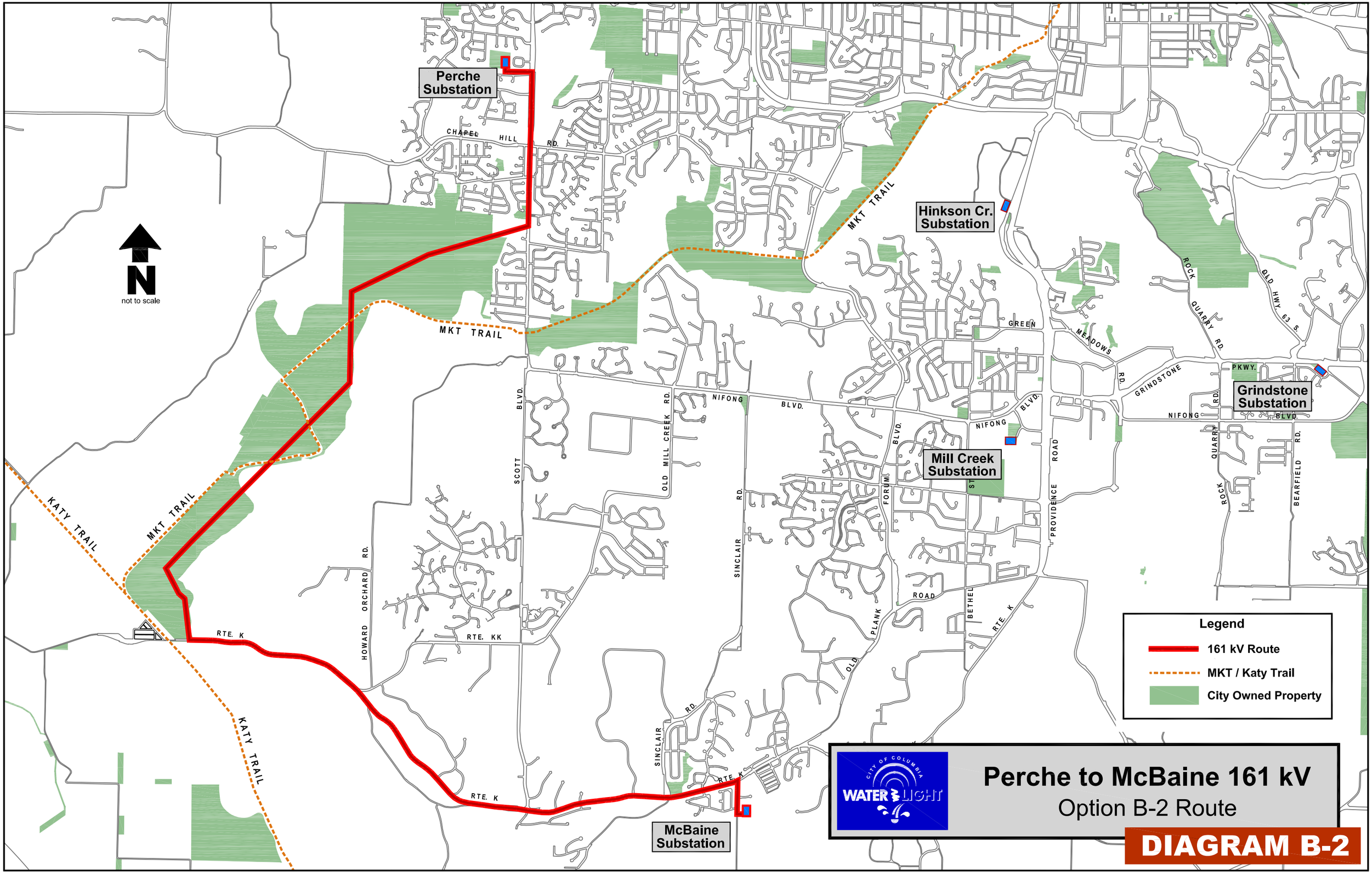
- Public Preferred 69 kV Route
- Public Preferred 69 kV Route
- Existing 69 kV Route
- Future Demolition
- Preferred 161 kV Route
- Preferred 161 kV Route
- Preferred 161 kV Route

CITY OF COLUMBIA WATER & LIGHT

Perche to McBaine 161 kV
Mill Creek to Hinkson & Grindstone 69 kV

Option B Identified Routes

DIAGRAM B


Perche Substation
Hinkson Cr. Substation
Mill Creek Substation
Grindstone Substation
McBaine Substation
CHAPEL HILL RD.
MKT TRAIL
MKT TRAIL
MKT TRAIL
KATY TRAIL
KATY TRAIL
RTE. K
RTE. K
RTE. K
RTE. KK
HOWARD ORCHARD RD.
SCOTT BLVD.
OLD MILL CREEK RD.
NIFONG BLVD.
NIFONG BLVD.
NIFONG BLVD.
SINCLAIR RD.
SINCLAIR RD.
FORUM BLVD.
PROVIDENCE ROAD
OLD PLANK ROAD
BETHEL ST.
RTE. K
GREEN MEADOWS RD.
GRINDSTONE PKWY.
ROCK QUARRY RD.
QUARRY RD.
ROCK QUARRY RD.
BEARFIELD RD.
QLD. HWY. 63 S.
N
not to scale
Legend
161 kV Route
MKT / Katy Trail
City Owned Property
CITY OF COLUMBIA
WATER LIGHT
Perche to McBaine 161 kV
Option B-2 Route
DIAGRAM B-2

City of Columbia Water and Light
Perche Creek - McBaine 161-kV Transmssion Line (Option B)
Route Selection Matrix

	Public Feedback Ranking	Importance Factor (See Note)	GREEN LINE			RED LINE			RED-ORANGE-GREEN LINE			RED-BLUE-GREEN LINE		
Proximity to Residences	30.0%		**Count of Instance**	**Normalizing Factor**	**Total impact**	**Count of Instance**	**Normalizing Factor**	**Total impact**	**Count of Instance**	**Normalizing Factor**	**Total impact**	**Count of Instance**	**Normalizing Factor**	**Total impact**
Houses 0-100		-10	15	200	-9,000	5	200	-3,000	15	200	-9,000	16	200	-9,600
Houses 100-200		-5	94	200	-28,200	44	200	-13,200	81	200	-24,300	54	200	-16,200
Multi-Family 0-100		-10	24	200	-14,400	42	200	-25,200	40	200	-24,000	40	200	-24,000
Multi-Family 100-200		-5	43	200	-12,900	16	200	-4,800	22	200	-6,600	21	200	-6,300
Nursing homes 0-100		-10	0	200	0	0	200	0	0	200	0	0	200	0
Nursing homes 100-200		-5	0	200	0	0	200	0	0	200	0	0	200	0
Proximity to Residences TOTALS					**-64,500**			**-46,200**			**-63,900**			**-56,100**
Proximity to Schools	19.3%		**Lineal feet of instance**		**Total impact**	**Lineal feet of instance**		**Total impact**	**Lineal feet of instance**		**Total impact**	**Lineal feet of instance**		**Total impact**
Day care 0-100		-10	0		0	0		0	0		0	0		0
Day Care 100-200		-5	0		0	0		0	0		0	0		0
Schools 0-100		-10	0		0	0		0	0		0	0		0
Schools 100-200		-5	0		0	0		0	0		0	0		0
Proximity to Schools TOTALS					**0**			**0**			**0**			**0**
Proximity to Environmental Concerns	13.1%		**Lineal feet of instance**		**Total impact**	**Lineal feet of instance**		**Total impact**	**Lineal feet of instance**		**Total impact**	**Lineal feet of instance**		**Total impact**
Wooded/forested crossed		-10	2336		-3,060	11054		-14,481	0		0	0		0
Streams 0-200		-10	200		-262	600		-786	1100		-1,441	1100		-1,441
Conservation areas crossed		-10	0		0	0		0	0		0	0		0
Wetlands crossed		-10	156		-204	2446		-3,204	691		-905	196		-257
Agricultural property crossed		3	0		0	0		0	0		0	0		0
Proximity to Environmental Concerns TOTALS					**-3,527**			**-18,471**			**-2,346**			**-1,698**
Proximity to Recreation Areas	11.5%		**Lineal feet of instance**		**Total impact**	**Lineal feet of instance**		**Total impact**	**Lineal feet of instance**		**Total impact**	**Lineal feet of instance**		**Total impact**
Parks 0-100		-10	1050		-1,208	424		-488	424		-488	424		-488
Parks 100-200		-5	1347		-775	424		-244	1058		-608	424		-244
Trails 0-100		-10	12		-14	12		-14	12		-14	12		-14
Trails 100-200		-5	0		0	0		0	0		0	0		0
Other recreation areas 0-100		-10	0		0	0		0	0		0	0		0
Other recreation areas 100-200		-5	0		0	541		-311	541		-311	541		-311
Proximity to Recreation Areas TOTALS					**-1,996**			**-1,056**			**-1,421**			**-1,056**
Proximity to Businesses	12.4%		**Count of Instance**	**Normalizing Factor**	**Total impact**	**Count of Instance**	**Normalizing Factor**	**Total impact**	**Count of Instance**	**Normalizing Factor**	**Total impact**	**Count of Instance**	**Normalizing Factor**	**Total impact**
Commercial structures 0-100		-5	0	500	0	0	500	0	1	500	-310	1	500	-310
Commercial structures 100-200		-2	7	500	-868	1	500	-124	4	500	-496	4	500	-496
Churches 0-100		-5	0	500	0	0	500	0	0	500	0	0	500	0
Churches 100-200		-2	0	500	0	0	500	0	0	500	0	0	500	0
Hospitals 0-100		-10	0	500	0	0	500	0	0	500	0	0	500	0
Hospitals 100-200		-5	0	500	0	0	500	0	0	500	0	0	500	0
Proximity to Businesses TOTALS					**-868**			**-124**			**-806**			**-806**
TOTAL LINEAL FEET PUBLIC FEEDBACK IMPACT					**-70,890**			**-65,851**			**-68,473**			**-59,660**
AVERAGE LINEAL FEET FEEDBACK IMPACT	-68370.81													
COST	13.7%				$6,526,142			$8,343,663			$7,767,692			$7,084,854
COST COMPARISON ADJUSTMENT (Highest cost is 1)					0.78			1.00			0.93			0.85
COST COMPARISON ADJUSTED APPLIED TO PUBLIC FEEDBACK					0.11			0.14			0.13			0.12
COST AS A NEGATIVE PERCENT IMPACT OF TOTAL LINE FEEDBACK.					**-7,326**			**-9,367**			**-8,720**			**-7,954**
TOTAL LINE SCORE INCLUDING ADJUSTED COST COMPARISON					**-78,217**			**-75,218**			**-77,193**			**-67,614**

Note: (Importance factors range from -10 to +10, with negative values indicating negative characteristics and positive values indicting positive characteristics.

DIAGRAM C

City of Columbia Water and Light
Mill Creek - Hinkson Creek 69-kV Transmssion Line (Option B)
Route Selection Matrix

	Public Feedback Ranking	Importance Factor (See Note)	ORANGE LINE			RED LINE		
Proximity to Residences	30.0%		**Count of Instance**	**Normalizing Factor**	**Total impact**	**Count of Instance**	**Normalizing Factor**	**Total impact**
Houses 0-100		-10	0	200	0	0	200	0
Houses 100-200		-5	0	200	0	0	200	0
Multi-Family 0-100		-10	3	200	-1800	0	200	0
Multi-Family 100-200		-5	5	200	-1500	0	200	0
Nursing homes 0-100		-10	0	200	0	0	200	0
Nursing homes 100-200		-5	0	200	0	0	200	0
Proximity to Residences TOTALS					**-3300**			**0**
Proximity to Schools	19.3%		**Lineal feet of instance**		**Total impact**	**Lineal feet of instance**		**Total impact**
Day care 0-100		-10	0		0	0		0
Day Care 100-200		-5	0		0	0		0
Schools 0-100		-10	0		0	600		-1158
Schools 100-200		-5	0		0	0		0
Proximity to Schools TOTALS					**0**			**-1158**
Proximity to Environmental Concerns	13.1%		**Lineal feet of instance**		**Total impact**	**Lineal feet of instance**		**Total impact**
Wooded/forested crossed		-10	449		-588.19	0		0
Streams 0-200		-10	100		-131	0		0
Conservation areas crossed		-10	0		0	0		0
Wetlands crossed		-10	0		0	100		-131
Agricultural property crossed		3	0		0	0		0
Proximity to Environmental Concerns TOTALS					**-719.19**			**-131**
Proximity to Recreation Areas	11.5%		**Lineal feet of instance**		**Total impact**	**Lineal feet of instance**		**Total impact**
Parks 0-100		-10	0		0	0		0
Parks 100-200		-5	0		0	0		0
Trails 0-100		-10	0		0	0		0
Trails 100-200		-5	0		0	0		0
Other recreation areas 0-100		-10	0		0	0		0
Other recreation areas 100-200		-5	0		0	0		0
Proximity to Recreation Areas TOTALS					**0**			**0**
Proximity to Businesses	12.4%		**Count of Instance**	**Normalizing Factor**	**Total impact**	**Count of Instance**	**Normalizing Factor**	**Total impact**
Commercial structures 0-100		-5	9	500	-2790	5	500	-1550
Commercial structures 100-200		-2	16	500	-1984	6	500	-744
Churches 0-100		-5	0	500	0	0	500	0
Churches 100-200		-2	0	500	0	0	500	0
Hospitals 0-100		-10	0	500	0	0	500	0
Hospitals 100-200		-5	0	500	0	0	500	0
Proximity to Businesses TOTALS					**-4774**			**-2294**
TOTAL LINEAL FEET PUBLIC FEEDBACK IMPACT					**-8793.19**			**-3583**
AVERAGE LINEAL FEET FEEDBACK IMPACT	-6188.095							
COST	13.7%				$1,652,173			$1,493,798
COST COMPARISON ADJUSTMENT (HIGHEST cost is 1)					1.00			0.90
COST COMPARISON ADJUSTED APPLIED TO PUBLIC FEEDBACK					0.14			0.12
COST AS A NEGATIVE PERCENT IMPACT OF TOTAL LINE FEEDBACK.					**-848**			**-767**
TOTAL LINE SCORE INCLUDING ADJUSTED COST COMPARISON					**-9641**			**-4350**

Note: (Importance factors range from -10 to +10, with negative values indicating negative characteristics and positive values indicting positive characteristics.

DIAGRAM D

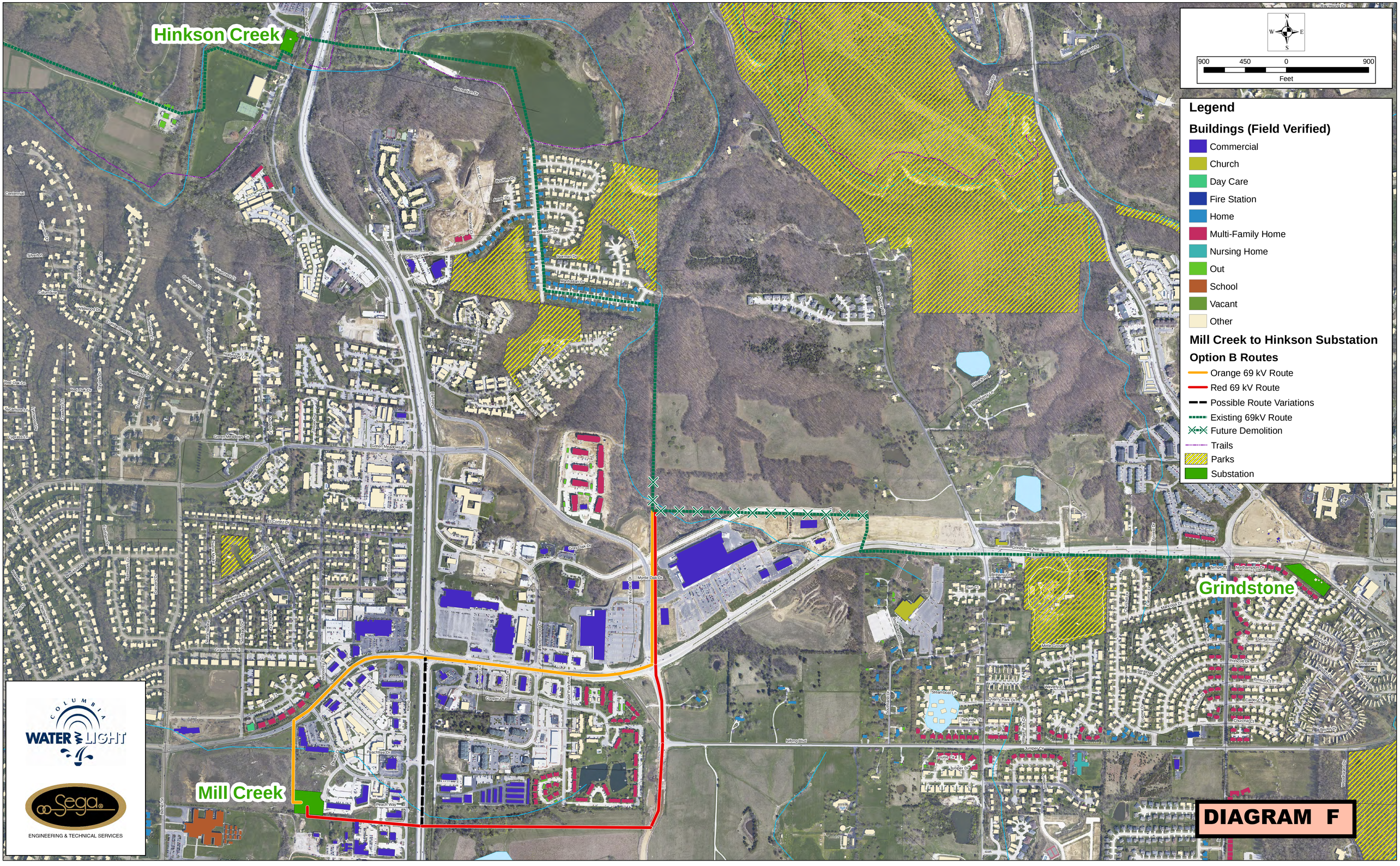
City of Columbia Water and Light
Mill Creek - Grindstone 69-kV Transmssion Line (Option B)
Route Selection Matrix

	Public Feedback Ranking	Importance Factor (See Note)	GREEN LINE			YELLOW LINE		
Proximity to Residences	30.0%		**Count of Instance**	**Normalizing Factor**	**Total impact**	**Count of Instance**	**Normalizing Factor**	**Total impact**
Houses 0-100		-10	1	200	-600	0	200	0
Houses 100-200		-5	4	200	-1200	0	200	0
Multi-Family 0-100		-10	0	200	0	0	200	0
Multi-Family 100-200		-5	0	200	0	0	200	0
Nursing homes 0-100		-10	0	200	0	0	200	0
Nursing homes 100-200		-5	0	200	0	0	200	0
Proximity to Residences TOTALS					**-1800**			**0**
Proximity to Schools	19.3%		**Lineal feet of instance**		**Total impact**	**Lineal feet of instance**		**Total impact**
Day care 0-100		-10	0		0	0		0
Day Care 100-200		-5	0		0	0		0
Schools 0-100		-10	600		-1158	600		-1158
Schools 100-200		-5	0		0	0		0
Proximity to Schools TOTALS					**-1158**			**-1158**
Proximity to Environmental Concerns	13.1%		**Lineal feet of instance**		**Total impact**	**Lineal feet of instance**		**Total impact**
Wooded/forested crossed		-10	0		0	0		0
Streams 0-200		-10	100		-131	100		-131
Conservation areas crossed		-10	0		0	0		0
Wetlands crossed		-10	100		-131	100		-131
Agricultural property crossed		3	0		0	0		0
Proximity to Environmental Concerns TOTALS					**-262**			**-262**
Proximity to Recreation Areas	11.5%		**Lineal feet of instance**		**Total impact**	**Lineal feet of instance**		**Total impact**
Parks 0-100		-10	0		0	0		0
Parks 100-200		-5	0		0	0		0
Trails 0-100		-10	0		0	0		0
Trails 100-200		-5	0		0	0		0
Other recreation areas 0-100		-10	0		0	0		0
Other recreation areas 100-200		-5	0		0	0		0
Proximity to Recreation Areas TOTALS					**0**			**0**
Proximity to Businesses	12.4%		**Count of Instance**	**Normalizing Factor**	**Total impact**	**Count of Instance**	**Normalizing Factor**	**Total impact**
Commercial structures 0-100		-5	4	500	-1240	4	500	-1240
Commercial structures 100-200		-2	4	500	-496	8	500	-992
Churches 0-100		-5	0	500	0	0	500	0
Churches 100-200		-2	0	500	0	0	500	0
Hospitals 0-100		-10	0	500	0	0	500	0
Hospitals 100-200		-5	0	500	0	0	500	0
Proximity to Businesses TOTALS					**-1736**			**-2232**
TOTAL LINEAL FEET PUBLIC FEEDBACK IMPACT					**-4956**			**-3652**
AVERAGE LINEAL FEET FEEDBACK IMPACT	-4304							
COST	13.7%				$1,652,173			$1,493,798
COST COMPARISON ADJUSTMENT (HIGHEST cost is 1)					1.00			0.90
COST COMPARISON ADJUSTED APPLIED TO PUBLIC FEEDBACK					0.14			0.12
COST AS A NEGATIVE PERCENT IMPACT OF TOTAL LINE FEEDBACK.					**-590**			**-533**
TOTAL LINE SCORE INCLUDING ADJUSTED COST COMPARISON					**-5546**			**-4185**

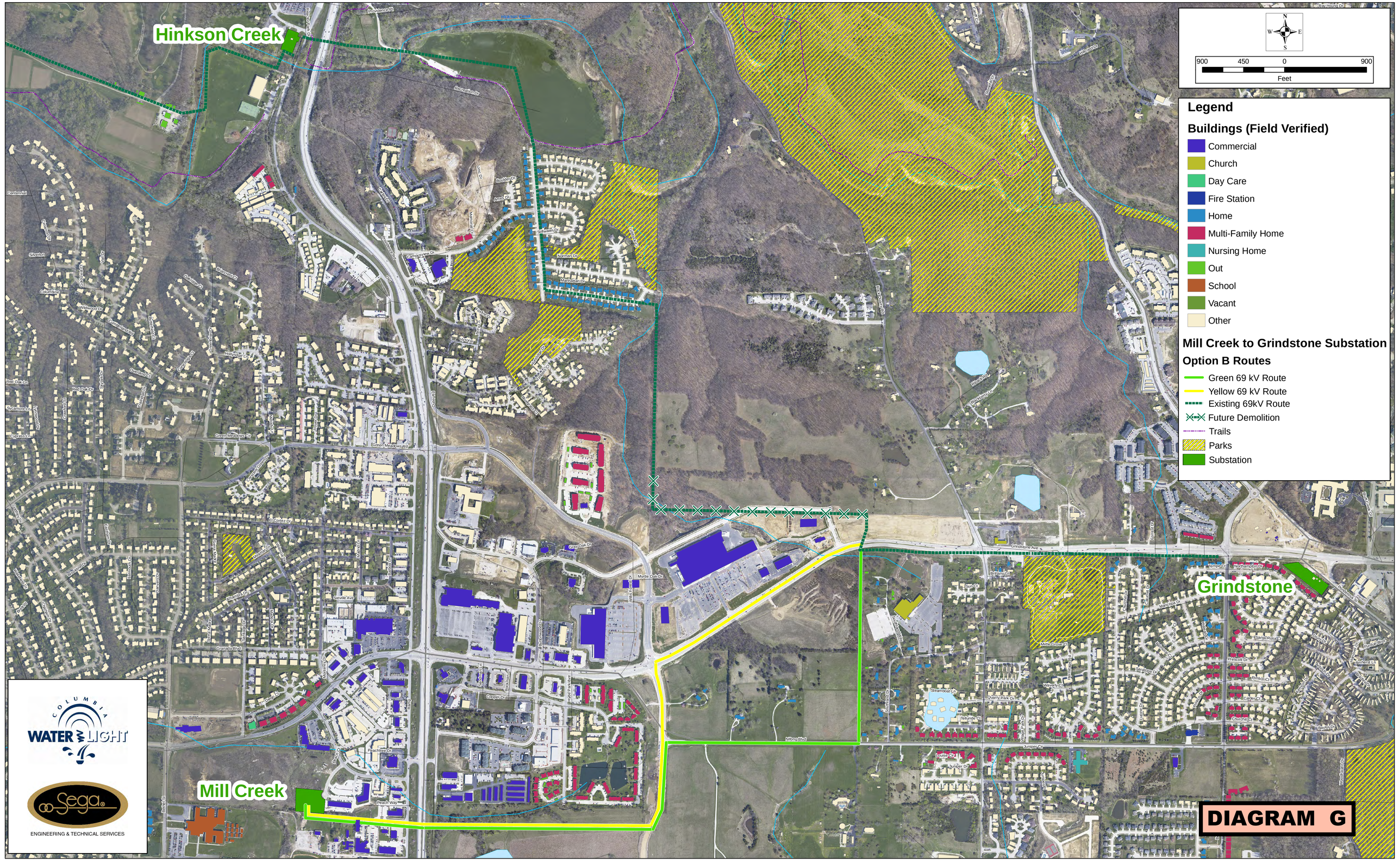
Note: (Importance factors range from -10 to +10, with negative values indicating negative characteristics and positive values indicting positive characteristics.

DIAGRAM E

OPTION B - MILL CREEK TO HINKSON SUBSTATION



OPTION B - MILL CREEK TO GRINDSTONE SUBSTATION



OPTION B - PERCHE TO MCBAINE SUBSTATION

Perche

McBaine

DIAGRAM H

N
W E
S

2,600 1,300 0 2,600
Feet

Legend

Buildings (Field Verified)

- Commercial
- Church
- Day Care
- Fire Station
- Home
- Multi-Family Home
- Nursing Home
- Out
- School
- Vacant
- Other

Perche to McBaine Substation 161 kV Routes

- Green 161 kV Route
- Red 161 kV Route
- Red - Double Circuit on Existing Perche to Overton
- Orange 161 kV Route Possible Variation
- Blue 161 kV Route Possible Variation
- Existing 69kV Route
- Trails
- Parks
- Substation

COLUMBIA WATER & LIGHT

Sega

ENGINEERING & TECHNICAL SERVICES

NIFONG
BLVD.
NIFONG
BLVD.
MONTEREY
DR.
PEACHTREE
DR.
PEACH
CT.
ROAD
road
outer
PROVIDENCE
Substation
Location
N
not to scale
CITY OF COLUMBIA
WATER & LIGHT
Mill Creek Substation
Location Map
DIAGRAM I