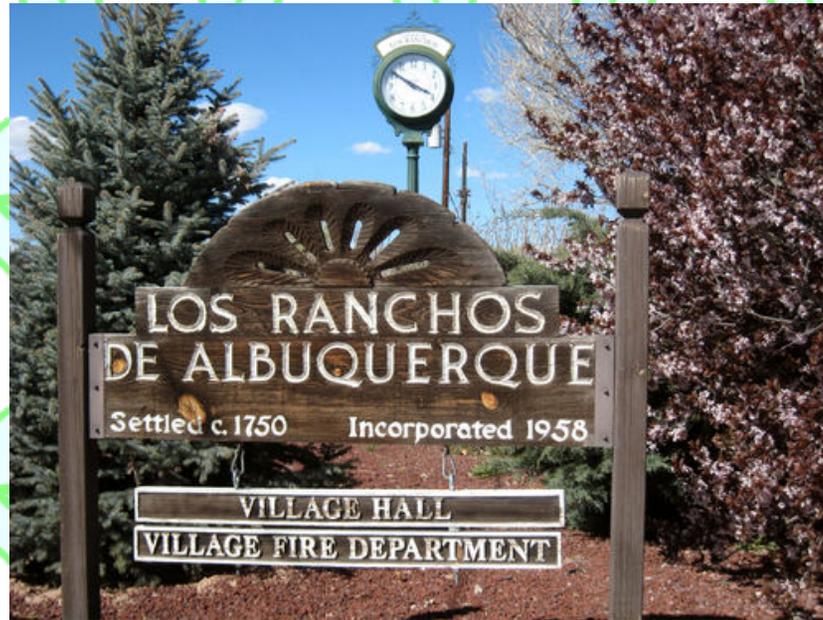


# Village of Los Ranchos Lighting & Roadway Improvement Study



# Project Overview

- Tierra West LLC was contacted by the Village to investigate lighting options for the 4th Street corridor between Shulte Road and El Pueblo Rd. New lighting will be high intensity LED to minimize power consumption
- During initial discussions, it was determined that we needed to investigate reducing the current 4 lane roadway section to a 2 lane roadway with a center turn lane.
- Lighting options to be considered:
  - Existing power poles on the east side of 4th St
  - New fixtures along the new center lane in landscaped medians
  - New fixtures on the west side
  - New fixtures in a staggered condition (east and west side of 4th St)
- Roadway options to be considered:
  - Restripe existing roadway to two lanes with a center turn lane and bike lanes
  - Reconstruct roadway to two lanes with center turn lane, parallel parking, and bike trails
  - Reconstruct roadway to two lanes with center turn lane, head-in parking, and bike trails

# Existing Conditions

- Corridor is approximately 1.65 miles long and extends from Shulte Road to El Pueblo Rd.
- Existing roadway consists of two northbound lanes and two southbound lanes without bike lanes.
- No existing lighting along corridor.



# Existing Conditions

- Overhead power lines run along the east right-of-way line throughout the project.
- Existing commercial developments allow parking along 4th St. which is a safety concern

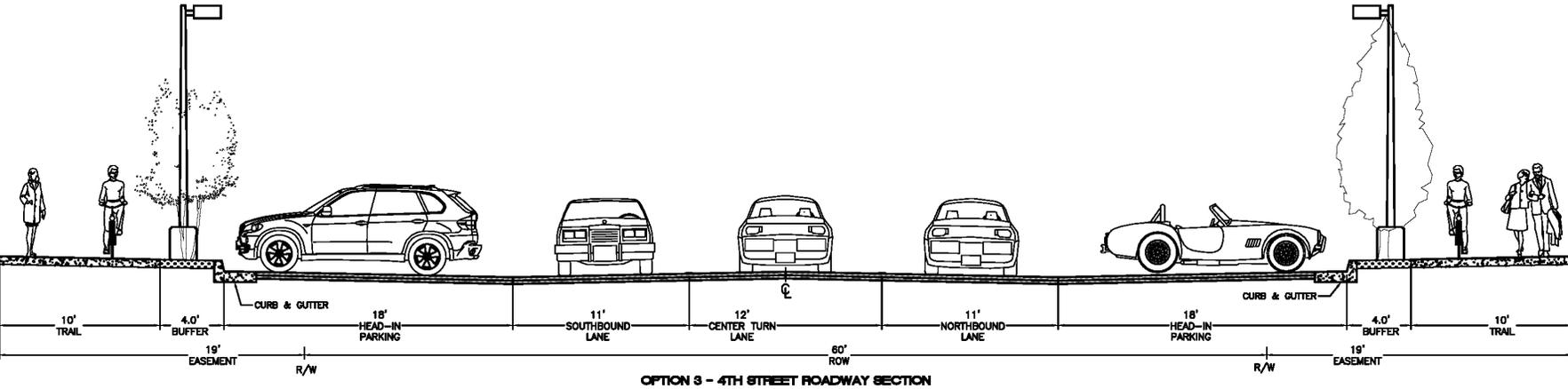
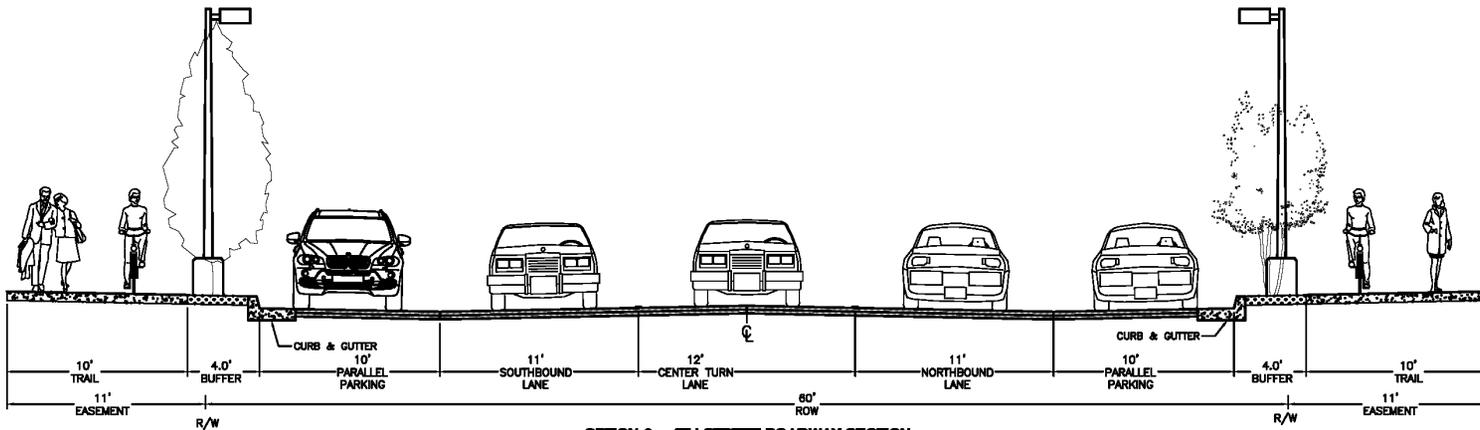
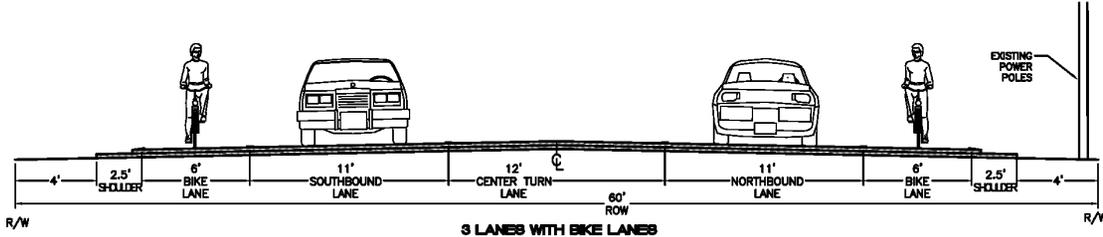


# Lighting Options

- All street lighting will be high efficiency LED
- Lighting locations considered include:
  1. Existing power poles on the east side of 4th St
  2. New fixtures along the new center lane in landscaped medians
  3. New fixtures on the west side
  4. New fixtures in a staggered condition (east and west side of 4th St)



# Roadway Options

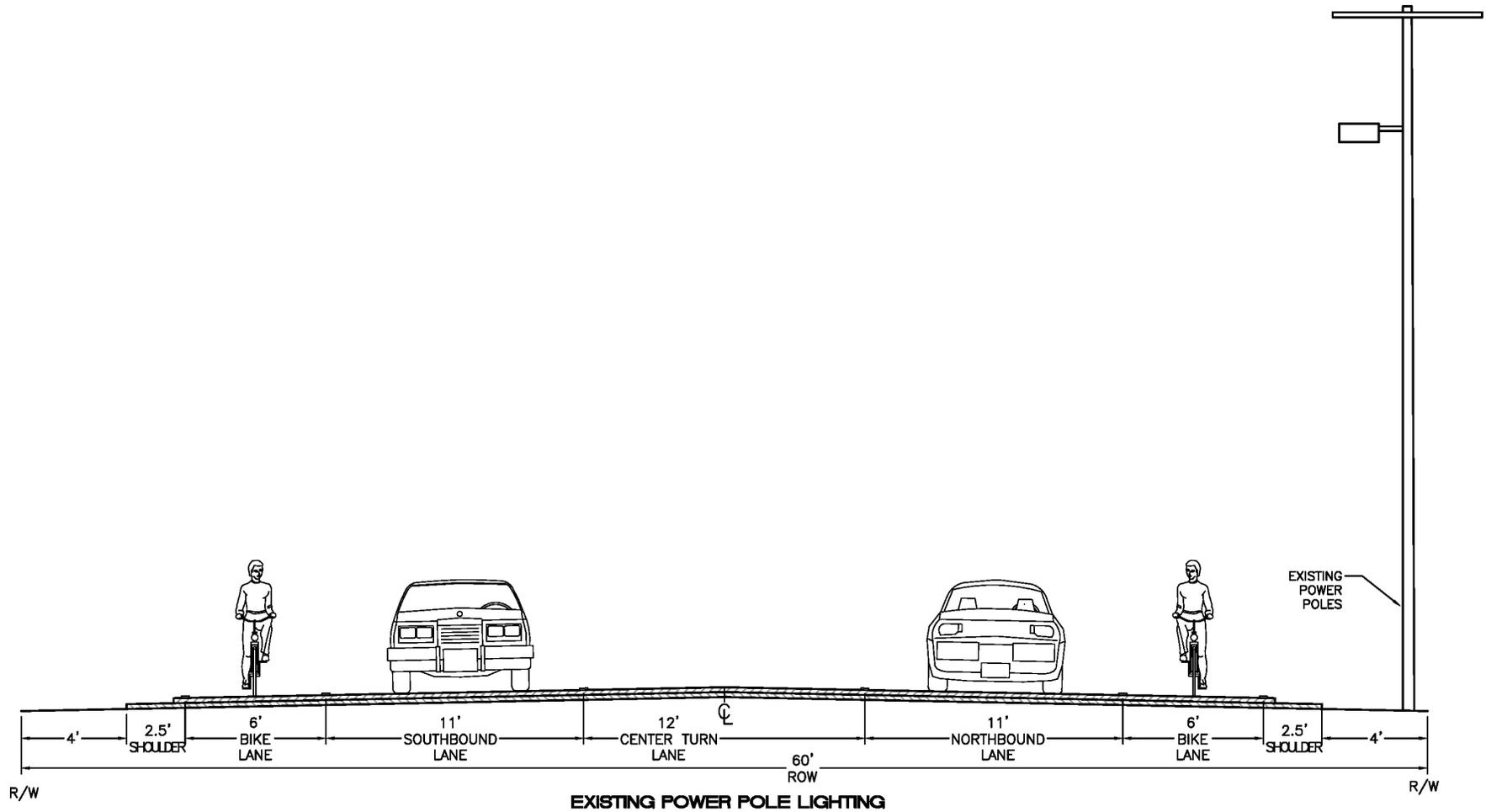


# Advantages of LED

- Super-bright white LED's have the advantage to outperform HID;
  - Minimal depreciation... “lighting lasts longer”
  - Better optical efficiency results... “no wasted light”
  - Higher lumens per watt... “energy friendly”
  - Contain no mercury and recyclable... “environmentally friendly”
  - Energy rebates are available for LED lighting.

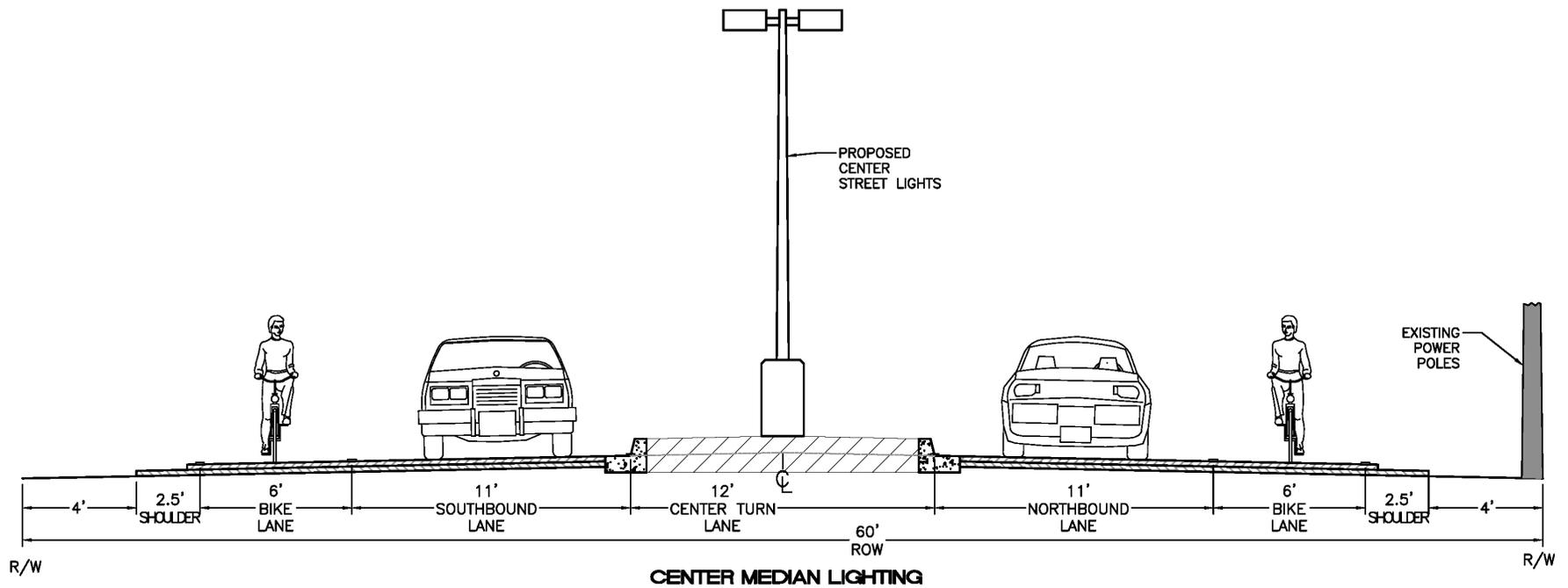


# Existing Pole Option



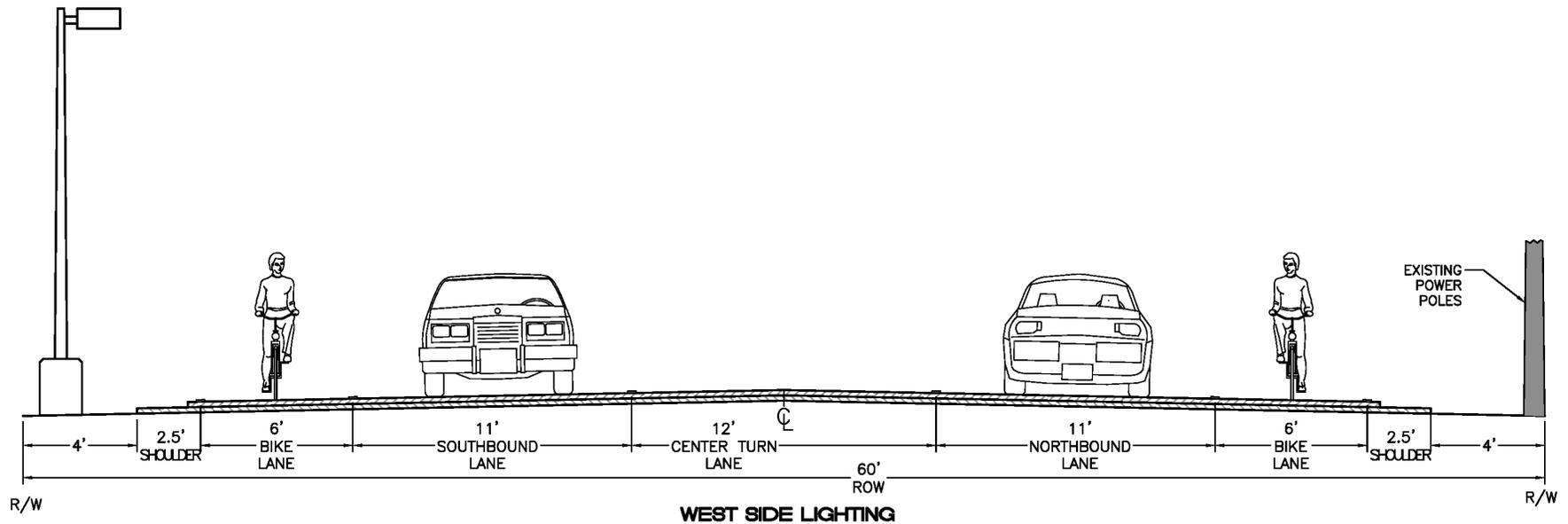


# Median Island Lighting

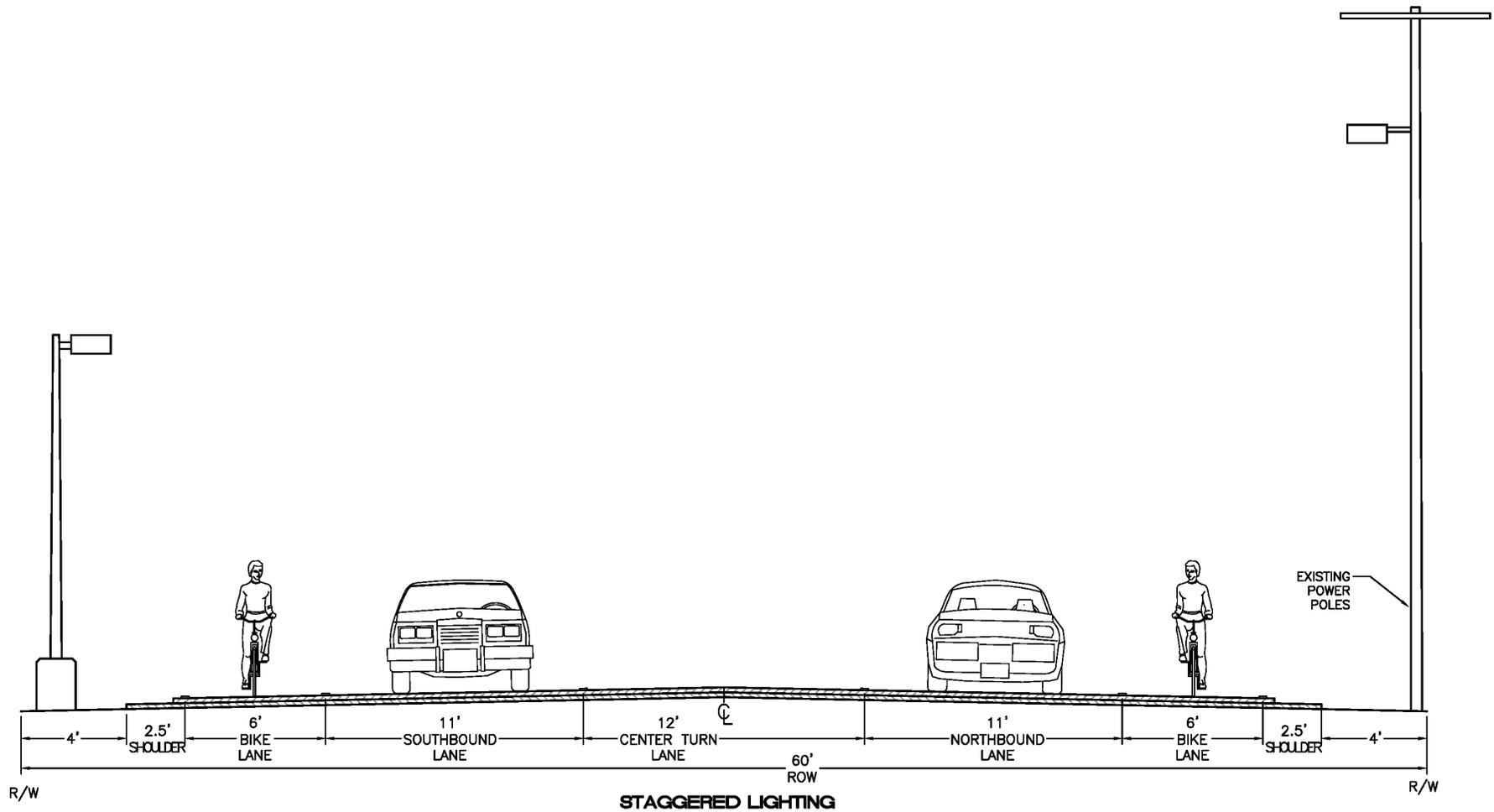




# West Side Lighting



# Staggered Lighting



# Lighting Cost Comparison

The below estimated prices are for lighting only and do not include Roadway Improvements.

- Existing Power Poles - \$340,000
- Median Lighting - \$670,000
- West Side Lighting - \$1,036,000
- Staggered East/West Lighting - \$900,000

# Roadway Improvement Options

- Roadway Improvements considered include:
  1. 3 Lane configuration with new 6' bike lanes
  2. 3 Lane configuration with new 6' bike lanes and median islands if center lighting option is chosen
  3. 3 Lane configuration with new curbs, parallel parking for businesses, and new pedestrian/bike trails.
  4. 3 Lane configuration with new curbs, head-in parking for businesses, and new pedestrian/bike trails.

# 3 Lanes with Bike Lanes



AS-BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL	
CONTRACT NO.	DATE	CENTRAL POINT DATA	DATE	NO.	BY	REMARKS REASONS	BY
PROJECT NO.	DATE	NM STATE PLANE COORDINATES	DATE	DATE	DATE		
DATE	DATE	CENTRAL ZONE (NAD 27)	DATE	DESIGNED BY: INITIALS	DATE: 09/18/2012	DESIGN	DATE: 09/18/2012
DATE	DATE	X=VALUE	DATE	DRAWN BY: JTW	DATE: 09/18/2012		
DATE	DATE	Y=VALUE	DATE	DRAWING NAME: IMPROVEMENTS_OPTION_1	JOB NO.: 1012002		
DATE	DATE	G=GRID VALUE	DATE	CHECKED BY: JTW	DATE: 09/18/2012		
MICRO-FILM INFORMATION		MICRO-FILM INFORMATION		MICRO-FILM INFORMATION		MICRO-FILM INFORMATION	
RECORDED BY	NO.	RECORDED BY	NO.	RECORDED BY	NO.		
DATE	NO.	DATE	NO.	DATE	NO.		
DATE	NO.	DATE	NO.	DATE	NO.		

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VILLAGE OF LOS RANCHOS DE ALBUQUERQUE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING GROUP

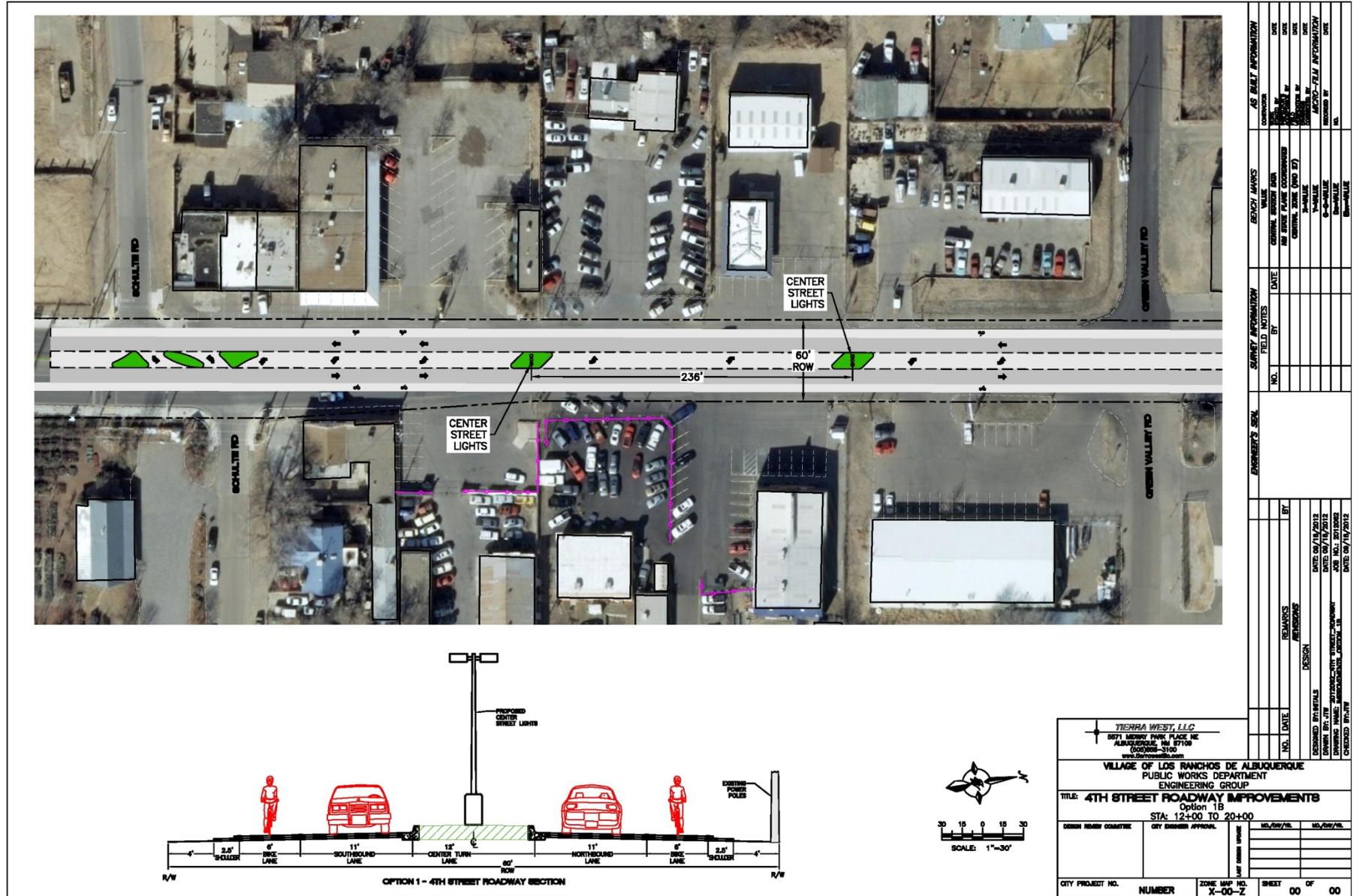
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Option 1A  
STA: 12+00 TO 20+00

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	NO./DAY/YR.	NO./DAY/YR.

CITY PROJECT NO. \_\_\_\_\_ ZONE MAP NO. X-00-Z

NUMBER \_\_\_\_\_ SHEET 00 OF 00

# 3 Lanes with Median Lighting



AS BUILT INFORMATION		DESIGNER'S SEAL	
NO.	DATE	NO.	DATE
REMARKS	DESIGN	REMARKS	DESIGN
DESIGNED BY: JTB	DATE: 09/19/2012	DESIGNED BY: JTB	DATE: 09/19/2012
DRAWN BY: JTB	DATE: 09/19/2012	DRAWN BY: JTB	DATE: 09/19/2012
CHECKED BY: JTB	DATE: 09/19/2012	CHECKED BY: JTB	DATE: 09/19/2012
SEARCH MAPS GENERAL SEARCH AREA NE STATE PLANE COORDINATES CENTRAL ZONE (NAD 83) 34-MILE 6-S-MILE 8-MILE 10-MILE		SURVEY INFORMATION FIELD NOTES NO. BY	
PROJECT INFORMATION PROJECT NO. SHEET NO. OF		CITY PROJECT NO. NUMBER ZONE MAP NO. X-00-Z SHEET 00 OF 00	

**TIERRA WEST, LLC**  
 6071 MENNY PARK PLACE NE  
 ALBUQUERQUE, NM 87109  
 (505)998-3100  
[www.tierrawest.com](http://www.tierrawest.com)

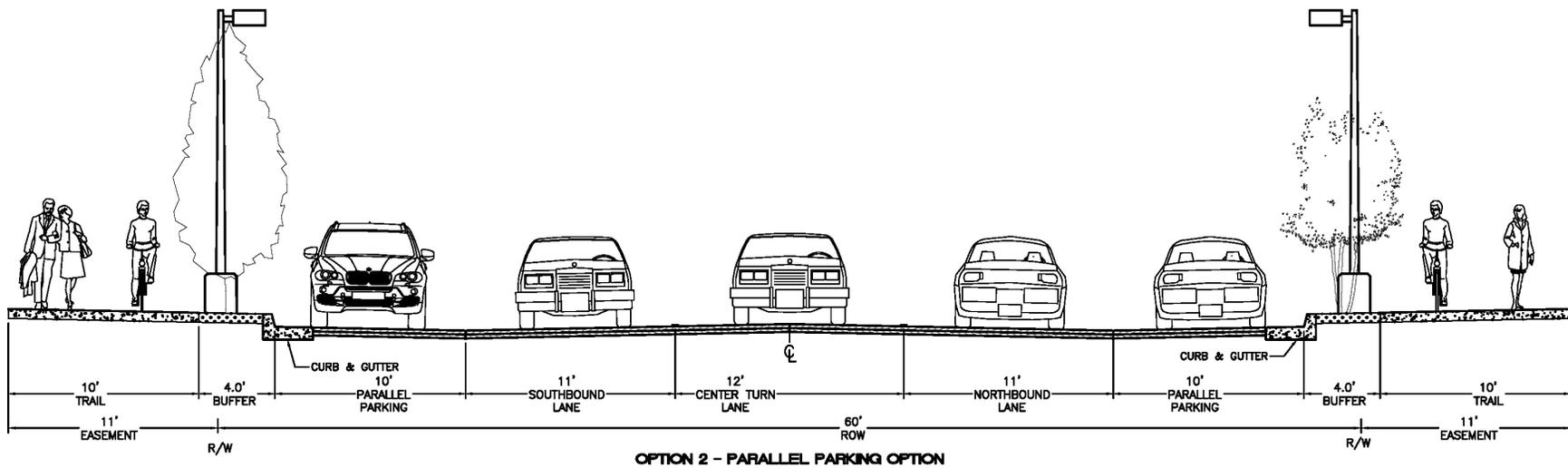
**VILLAGE OF LOS RANCHOS DE ALBUQUERQUE**  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING GROUP

**TITLE: 4TH STREET ROADWAY IMPROVEMENTS**  
 Option 1B  
 STA: 12+00 TO 20+00

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 CITY ENGINEER APPROVAL: \_\_\_\_\_  
 DATE: \_\_\_\_\_

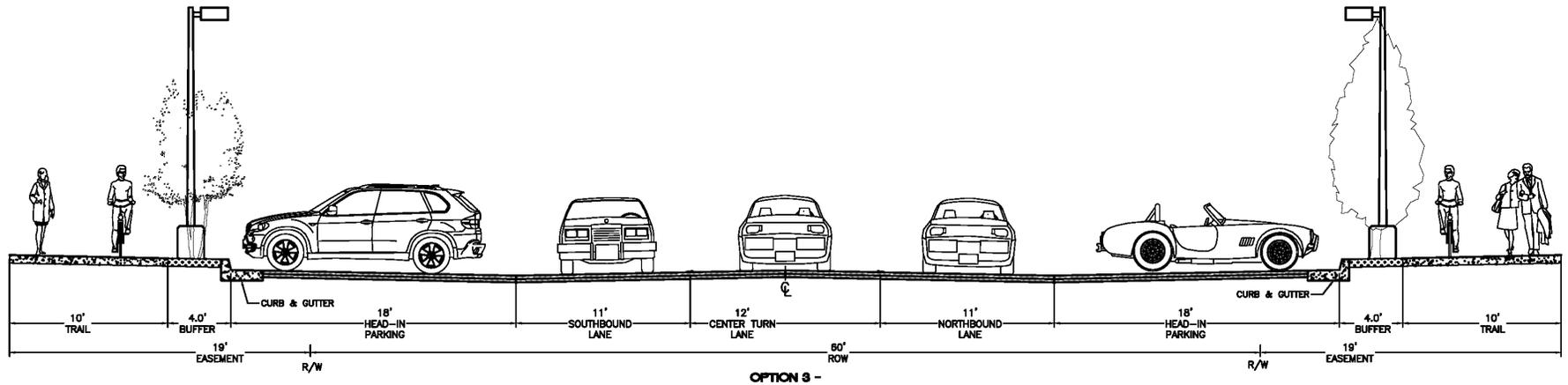


# 3 Lanes with Parallel Parking





# 3 Lanes with Head-In Parking



# Roadway Options Cost Comparison

The below estimated prices are for roadway improvements only and do not include Lighting Improvements.

- Restripe Roadway to 3 Lanes with Bike Lanes - \$240,000
- Median Islands (Lighting not Included) - \$365,000
- Parallel Parking w/ Curbs, Trails, and Landscaping - \$1,850,000
- Head In Parking w/ Curbs, Trails, and Landscaping - \$2,318,000

Note: Right-of-Way/Easement Acquisition and Major Intersection Improvements not included in pricing.

# Los Ranchos Gateway?



# Los Ranchos Gateway?



# Los Ranchos Gateway?

## Advantages

- Provides the aesthetics needed for this important corridor.
- Village identification
- Art can be incorporated into the gateway
- Roadway lighting can be implemented on structure

## Challenges/Disadvantages

- Added cost.

# Lighting Options

## Advantages/Disadvantages

# Lighting – Existing Power Poles

## Advantages

- Minimal disruption to traffic during placement of fixtures.
- Reduced cost as the requirement for poles and conduit runs are eliminated.
- Can be used as a cost effective lighting solution for the entire 1.6 mile section. The more ideal and aesthetic solution can then be phased in as funding becomes available.

## Challenges/Disadvantages

- Coverage of entire road width dependent on the allowable height of fixtures to be located on existing poles
- Although the power pole mounted fixtures provide adequate lighting, this option in itself does not enhance aesthetics along the corridor.

## Opinions

- This option provides for low cost lighting and allows the excess budget to be spent on the first phase of the roadway improvements.

# Lighting – Center Medians

## Advantages

- Minimal overhead conflicts compared to other options
- Allows for potential address and/or business identification signage
- Would need 45 – 60 locations for the entire 1.6 mile section.

## Challenges/Disadvantages

- Disrupts continuous center turn lane down the middle of the street.
- Large gaps in lighting coverage between fixtures.
- Significant traffic disruption during construction due to median island construction and conduit installation.
- Challenges for business access and traffic flows.
- Light poles will require protection from traffic.
- Increased risk of vehicles striking and damaging fixture.
- Increased cost of this option does not allow for enhanced roadway improvements during this phase of the project.
- Potential utility conflicts.

## Opinions

- This option provides minimal lighting coverage due to spacing of median islands. If this option is selected, we recommend that additional lights be installed on existing power poles and on the west side to fill in the coverage gaps.

# Lighting – West Side

## Advantages

- Moderate uniformity in lighting could be achieved.
- Fixtures ideally located at approximately 80' – 100' spacing for uniformity.
- Minimal disruption to traffic in 4<sup>th</sup> St since a majority of conduits and lights would be installed away from the main lanes of traffic.

## Challenges/Disadvantages

- Existing head in parking for businesses may eliminate areas for uniform coverage.
- Disruption to existing head-in parking at businesses due to conduit installation
- Coverage of entire road width possible but is dependent on fixture height and overhead conflicts.
- Increased cost of this option does not allow for enhanced roadway improvements during this phase of the project.
- Potential utility conflicts.

## Opinions

- Presents the best option for a uniform lighting solution. May be ideal with the addition of centerline lighting option. Further study would be required for the combination.

# Lighting – Staggered

## Advantages

- The highest level of uniformity in lighting would be achieved using a combination of the west side lighting option and lighting installed on existing power poles.
- Traffic in the center turn lane would not be impacted since median islands would not be required.

## Challenges/Disadvantages

- In the event new light poles on the east side are considered, the poles would likely only be 12' – 15' in height due to existing overhead power lines. 12'-15' height would not provide adequate light coverage.
- Lighting on Eastside if above 12' – 15' will need to be mounted to existing light poles.
- Due to location of existing parking and driveways, lighting coverage will not be uniform.
- Increased cost and coordination effort in conduit placement.
- Increased impact to traffic during construction

## Opinions

- A combination approach will result in attainable ideal lighting levels but will require increased coordination and capital costs.
- This option may allow for better Village signage and business/resident identification.

# Roadway Options

## Advantages/Disadvantages

# 3 Lanes with Bike Lanes

## Advantages

- Consists of restriping existing roadway and intersection transitions
- Minimal costs associated roadway improvements.
- Minimal traffic impacts during construction.

## Challenges/Disadvantages

- New bike lanes create a very unsafe condition due to existing parking along 4<sup>th</sup> St for existing businesses.
- Aesthetics of corridor are not improved.

## Opinions

- This option is very cost effective but provides an unsafe situation for bicyclists.

# 3 Lanes with Median Lighting

## Advantages –

- Allows for new parking in front of businesses.
- New landscaping enhances aesthetics.
- New pedestrian/bike trails get customers in front of businesses.
- New bike trails enhance bike safety.
- New lighting can be located in landscaped areas.
- Potential to correct existing drainage issues.

## Challenges/Disadvantages –

- Increased roadway improvements costs
- Need for easements and or right-of-way for new parking and bike trails.

## Opinions –

- This option provides for parking in front of businesses and enhances bicycle safety but requires easements and/or right-of-way for the improvements.

# 3 Lanes with Parallel Parking

## Advantages –

- Allows for new parking in front of businesses.
- New landscaping enhances aesthetics.
- New pedestrian/bike trails get customers in front of businesses.
- New bike trails enhance bike safety.
- New lighting can be located in landscaped areas.
- Potential to correct existing drainage issues.

## Challenges/Disadvantages –

- Increased roadway improvements costs
- Need for easements and or right-of-way for new parking and bike trails.
- This parallel parking option reduces the number of existing parking spaces available to businesses.

## Opinions –

- This option provides for parking in front of businesses and enhances bicycle safety but requires easements and/or right-of-way for the improvements.

# 3 Lanes with Head-In Parking

## Advantages –

- Allows for new parking in front of businesses.
- The proposed quantity of parking will match the quantity of parking available to businesses today.
- New landscaping enhances aesthetics.
- New pedestrian/bike trails get customers in front of businesses.
- New bike trails enhance bike safety.
- New lighting can be located in landscaped areas.
- Potential to correct existing drainage issues.

## Challenges/Disadvantages –

- Increased roadway improvements costs
- Need for easements and or right-of-way for new parking and bike trails.

## Opinions –

- This option provides for parking in front of businesses and enhances bicycle safety but requires easements and/or right-of-way for the improvements.

# Overall Cost Options

- Restripe Roadway/Lights on Existing Poles - \$580,000
- Restripe Roadway/West Side Lighting - \$1,276,000
- Restripe Roadway/Staggered Lighting - \$1,140,000
  
- Median Lighting/Median Improvements – \$1,035,000
  
- Parallel Parking/Lights on Existing Poles – \$2,190,000
- Parallel Parking/Median Lighting/Median Improvements - \$2,885,000
- Parallel Parking/West Side – \$2,886,000
- Parallel Parking/Staggered – \$2,750,000
  
- Head In Parking/Existing Poles – \$2,658,000
- Head In Parking/Median Lighting/Median Islands - \$3,353,000
- Head In Parking/West Side – \$3,354,000
- Head In Parking/Staggered - \$3,218,000