

Navajo Route 7 Street Lighting Pre-Scoping Report

Prepared for:
Chinle Chapter of the Navajo Nation
and
Navajo Division of Transportation
in collaboration with
ADOT – Multimodal Planning Division

March 23, 2016



PRE-SCOPING REPORT

GENERAL PROJECT INFORMATION	
Date: 2/5/2016	ADOT Project Manager: Don Sneed
Project Name: Navajo Route 7 Street Lighting Project	
City/Town Name: Chinle Chapter	County: Navajo
Primary Route/Street: Navajo Route 7	
Beginning Limit: (Milepost / Cross Street) MP 0.0 / US 191 Intersection	
End Limit: (Milepost / Cross Street) MP 2.2 / Holiday Inn	
Project Length: 2.2 Miles	
Right-of-Way Ownership(s) (where proposed project construction would occur): <i>(Check all that apply)</i> <input type="checkbox"/> City/Town; <input type="checkbox"/> County; <input type="checkbox"/> ADOT; <input type="checkbox"/> Private; <input type="checkbox"/> Federal; <input type="checkbox"/> Tribal; <input checked="" type="checkbox"/> Other: Bureau of Indian Affairs	
Adjacent Land Ownership(s): <i>(Check all that apply)</i> <input type="checkbox"/> City/Town; <input type="checkbox"/> County; <input type="checkbox"/> ADOT; <input type="checkbox"/> Private; <input type="checkbox"/> Federal; <input type="checkbox"/> Tribal; <input checked="" type="checkbox"/> Other: Bureau of Indian Affairs http://gis.azland.gov/webapps/parcel/	

LOCAL PUBLIC AGENCY (LPA) or TRIBAL GOVERNMENT INFORMATION <i>(If applicable)</i>	
LPA/Tribal Name: Chinle Chapter of the Navajo Nation	
LPA/Tribal Contact: Tyrone J. Begay, Chinle Chapter Planner	
Email Address: chinleplanner2014@gmail.com	Phone Number: (928) 674-2072
Administration: <input checked="" type="checkbox"/> ADOT Administered <input type="checkbox"/> Self-Administered <input type="checkbox"/> Certification Acceptance	

PROJECT NEED
<i>(Describe the issues and deficiencies that need to be fixed)</i> Inadequate street lighting along Navajo Route 7

PROJECT PURPOSE			
What is the Primary Purpose of the Project?	Preservation <input type="checkbox"/>	Modernization <input checked="" type="checkbox"/>	Expansion <input type="checkbox"/>
<i>(Generally describe the project goals. What will be done to fix the problem?)</i> Install Solar Street Lighting within BIA ROW			

PROJECT TYPE		
Pavement Preservation <input type="checkbox"/>	Roadway Widening <input type="checkbox"/>	System Enhancement <input type="checkbox"/>
Bridge Scour/Rehab <input type="checkbox"/>	Bridge Replacement <input type="checkbox"/>	Sign Replacement <input type="checkbox"/>
Other <input checked="" type="checkbox"/> : Lighting		

PROJECT RISKS

Check any risks identified that may impact the project's scope, schedule, or budget:

<input type="checkbox"/> Access / Traffic Control / Detour Issues	<input type="checkbox"/> Right-of-Way
<input type="checkbox"/> Constructability / Construction Window Issues	<input checked="" type="checkbox"/> Environmental
<input type="checkbox"/> Stakeholder Issues	<input checked="" type="checkbox"/> Utilities
<input checked="" type="checkbox"/> Structures & Geotech	<input type="checkbox"/> Other:

Risk Description: *(If a box is checked above, briefly explain the risk)*

New light poles should not be mounted to existing structure
 New light pole foundation excavation may require environmental investigation
 New light pole conduit/conductor excavation (if conventional lighting is used instead of solar lighting) may require environmental investigation
 New light pole foundation and/or conduit may impact existing utilities

FUNDING SOURCE(S)

Anticipated Project Design/Construction Funding Type: <i>(Check all that apply)</i>	<input checked="" type="checkbox"/> STP	<input type="checkbox"/> TAP	<input type="checkbox"/> HSIP	<input type="checkbox"/> State
	<input checked="" type="checkbox"/> Local	<input type="checkbox"/> Private	<input checked="" type="checkbox"/> Other: Tribal Transportation Program (TTP)	

COST ESTIMATE

Preliminary Engineering \$TBD	Design \$137,038	Right-of-Way \$0	Construction \$	Total \$TBD
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PROJECT DELIVERY

Delivery: Design-Bid-Build Design-Build Other:

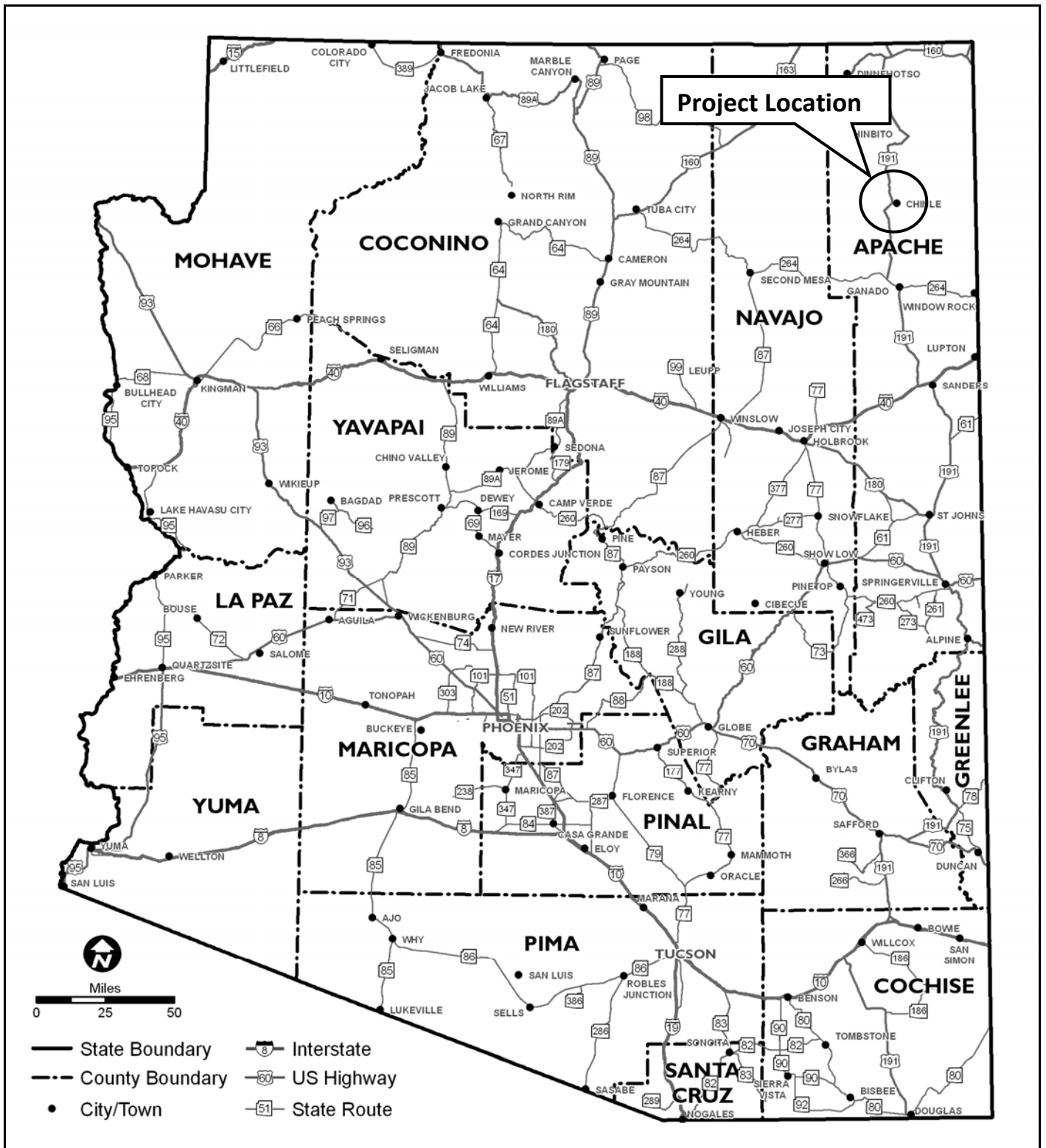
Design Program Year: FY TBD

Construction Program Year: FY TBD

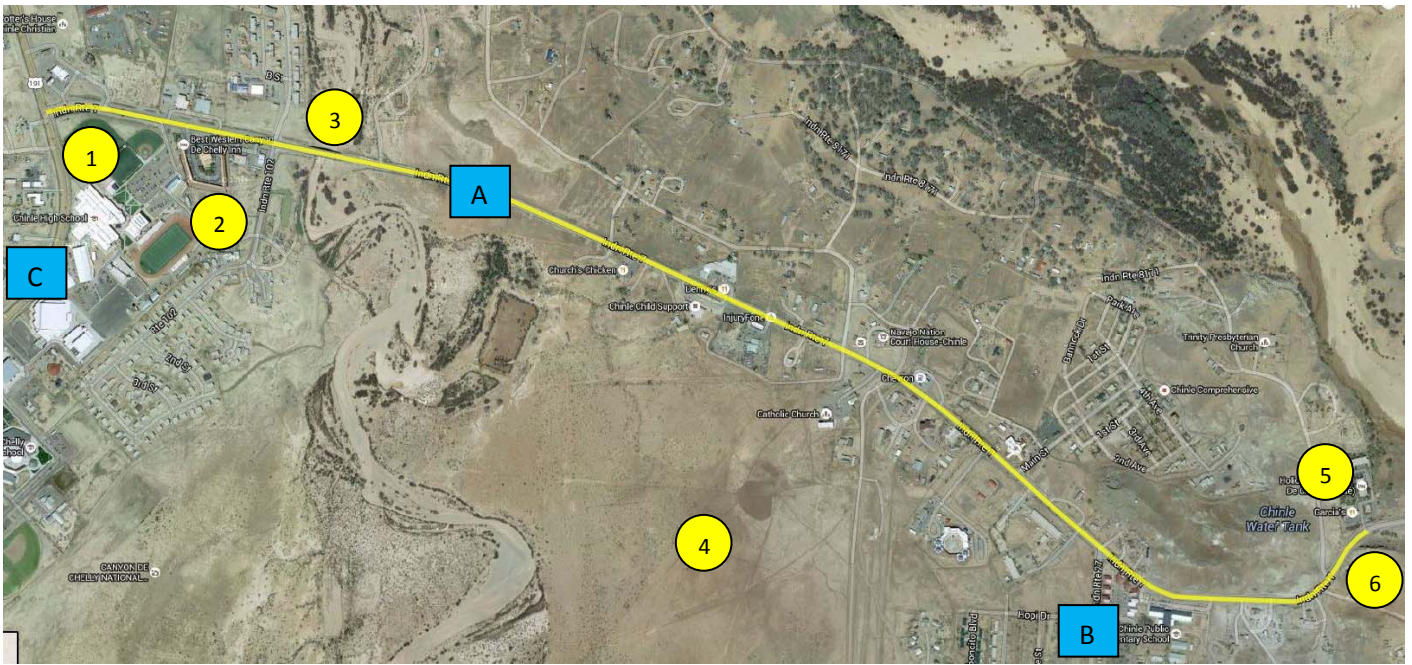
ATTACHMENTS

- 1) State Location Map
- 2) Project Vicinity Map
- 3) Project Scope of Work
- 4) Project Schedule
- 5) Itemized Cost Estimate
- 6) 15% Design Plan Sheets (as needed)

ATTACHMENT 1 – STATE LOCATION MAP



ATTACHMENT 2 – PROJECT VICINITY MAP



Key

1	Begin Project
2	Chinle High School
3	Existing Bridge over Nazlini Wash
4	Future Navajo Nation Public Safety Training Facility
5	Holiday Inn
6	End Project
A	Indian Route 7
B	Indian Route 27
C	US 191

ATTACHMENT 3 – SCOPE OF WORK

SCOPE OF WORK

FINAL DESIGN

- Complete a quick project verification (Stage I) review to assure the scope contained in this document is still valid
- Select a design consultant familiar with conventional and solar lighting to complete the final design
- Complete the final design in close conformance to the schedule shown below (actual durations may vary depending on workload and other factors and will be more accurately determined during final design.
- Refine the design and cost estimate.
- Prepare the project for bid advertisement, bid analysis and award.
- Navajo Division of Transportation (NDOT) finalize contract and provide NTP to contractor to begin construction.
- Public Involvement should be utilized throughout the project to keep everyone informed.
- Contractor staging area has not been identified and would be done during final design.
- Complete all clearances (environmental, right-of-way, utilities) prior to completion of design
- Complete Right-of-Way (ROW) purchase prior to construction.
- Complete final design, bid and award project.

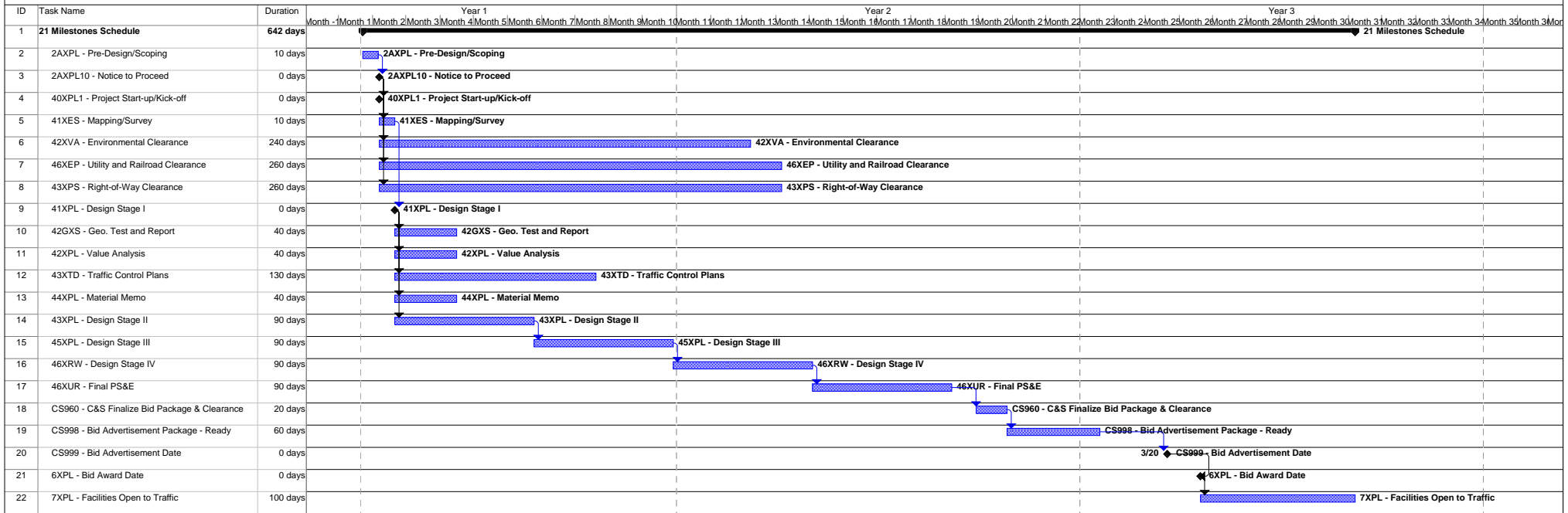
CONSTRUCTION

- Conduct partnering meeting and start construction mobilization.
- Contractor staking and layout. Utility relocation plan developed and implemented.
- Set up traffic control and any detours if need and determined by final design.
- Maintain access to adjacent properties.
- Complete the installation of new lights per the plans developed in final design
- Complete the installation of new pavement markings.

ATTACHMENT 4 – PROJECT SCHEDULE



**21 Milestone Schedule
Chinle Street Lighting Pre-Scoping**



Date: 3/21/16

	Task		Summary		External MileTask		Manual Task		Manual Summary		External Tasks		Split		
	Split		Project Summary		Inactive Milestone		Duration-only		Start-only		External Milestone		Progress		
	Milestone		External Tasks		Inactive Summary		Manual Summary Rollup		Finish-only		Progress				

Final Chinle Street Lighting - Pre-Scoping Schedule.mpp

Project Time: 642 days Working Days

ATTACHMENT 5 – ITEMIZED COST ESTIMATE

ITEM NO	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
704XX01	PAVEMENT MARKING	L. SUM	1	\$45,000.00	\$45,000.00
731XX01	OFF-GRID SOLAR-ENHANCED STREET LIGHTING	L. SUM	1	\$721,000.00	\$721,000.00
	SUBTOTAL 1				\$766,000.00
934XX01	MISCELLANEOUS WORK			15.00%	\$114,900.00
	SUBTOTAL 2				\$880,900.00
701XX01	MAINTENANCE AND PROTECTION OF TRAFFIC			10.00%	\$88,090.00
810XX01	EROSION CONTROL AND POLLUTION PREVENTION			1.00%	\$8,809.00
924XX02	CONTRACTOR QUALITY CONTROL			2.00%	\$17,618.00
925XX01	CONSTRUCTION SURVEY AND LAYOUT			2.00%	\$17,618.00
	SUBTOTAL 3				\$1,013,035.00
901XX01	MOBILIZATION			10.00%	\$101,303.50
	SUBTOTAL 4				\$1,114,338.50
	CONTINGENCY			5.00%	\$55,716.93
	INDIRECT COST ALLOCATION (ICAP)			10.35%	\$115,334.03
	CONSTRUCTION ENGINEERING			9.00%	\$100,290.47
	TRIBAL EMPLOYMENT RIGHT ORDINANCE (TERO) TAX			5.00%	\$55,716.93
	LIGHTING CONSTRUCTION SUBTOTAL				\$1,441,396.85
OTHER COST					
	UTILITY RELOCATION	L. SUM	1	\$20,000.00	\$20,000.00
	RIGHT OF WAY AND TCE REQUIREMENTS	L. SUM	1		\$0.00
	OTHER COST SUBTOTAL				\$20,000.00
	CONSTRUCTION TOTAL				\$1,461,396.85
DESIGN COST					
	PRELIMINARY AND FINAL DESIGN ENGINEERING			10.00%	\$146,139.68
	NDOT PMDR FEE	L. SUM	1	\$30,000.00	\$30,000.00
	NEPA FEE	L. SUM	1	\$40,000.00	\$40,000.00
	DESIGN COST SUBTOTAL				\$216,139.68
	PROJECT TOTAL				\$1,677,536.53

FUNDING

	94.3% FEDERAL			94.30%	\$1,581,916.95
	5.7% LOCAL MATCH			5.70%	\$95,619.58
	FUNDING TOTAL				\$1,677,536.53



Inovus Financial Analysis: Off-Grid

Customer Profile	
Project Name:	Navajo - Chinle Rte 7
City and State:	Chinle, AZ
Application:	Roadway
Current System:	None

Technical Details	
# of Poles:	64
Pole Height:	30ft
Pole Type:	Design
Battery Type:	AGM

Project Cost and Sustainability

The analysis below examines the economics over a 10 year period, implementing an Inovus Off-Grid Solar-Enhanced lighting solution instead of a traditional On-Grid 100 watt HID lighting solution.

Cost		
Payback Period:	Immediate	
Overall Cost Savings:	\$36,068.69	5%

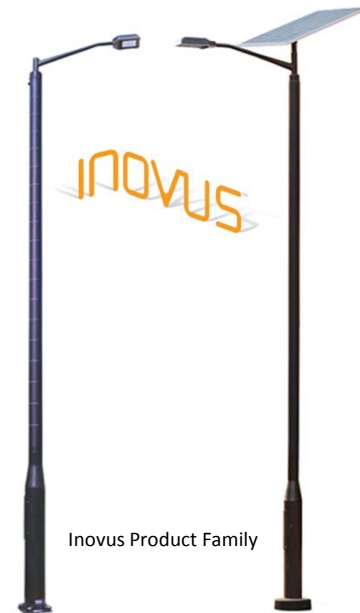
Sustainability	
Energy Savings:	35880.96 kWh / year
Carbon Reduction:	53821.44 lbs / year

Up Front Capital Expenses

Capital Expense	Inovus	Traditional
Hardware	\$581,862	\$83,200
Infrastructure	\$0	\$506,304
Installation	\$64,000	\$64,000
Total Project Cost	\$645,862	\$653,504
Net Savings	\$7,642	

Operating Cost

Operating Cost	Inovus	Traditional
Energy Cost	\$0	\$45,131
Maintenance Cost	\$69,504	\$52,800
Total Operating Cost	\$69,504	\$97,931
Net Savings	\$28,427	



Inovus Product Family