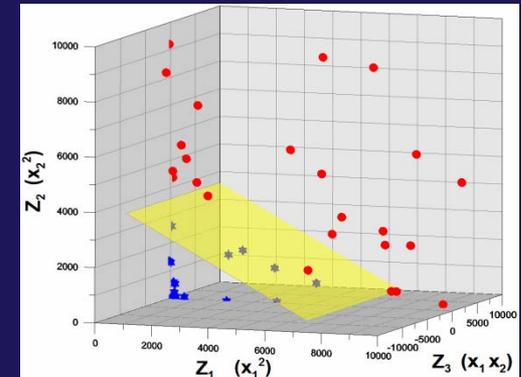
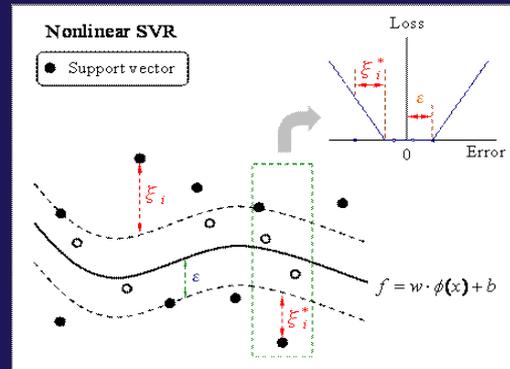
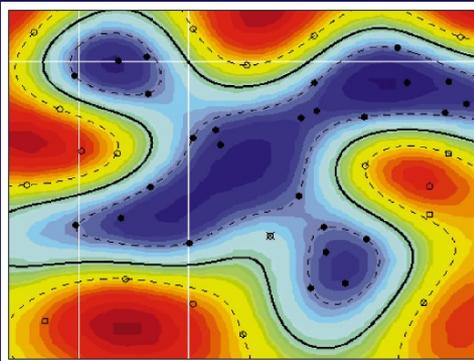


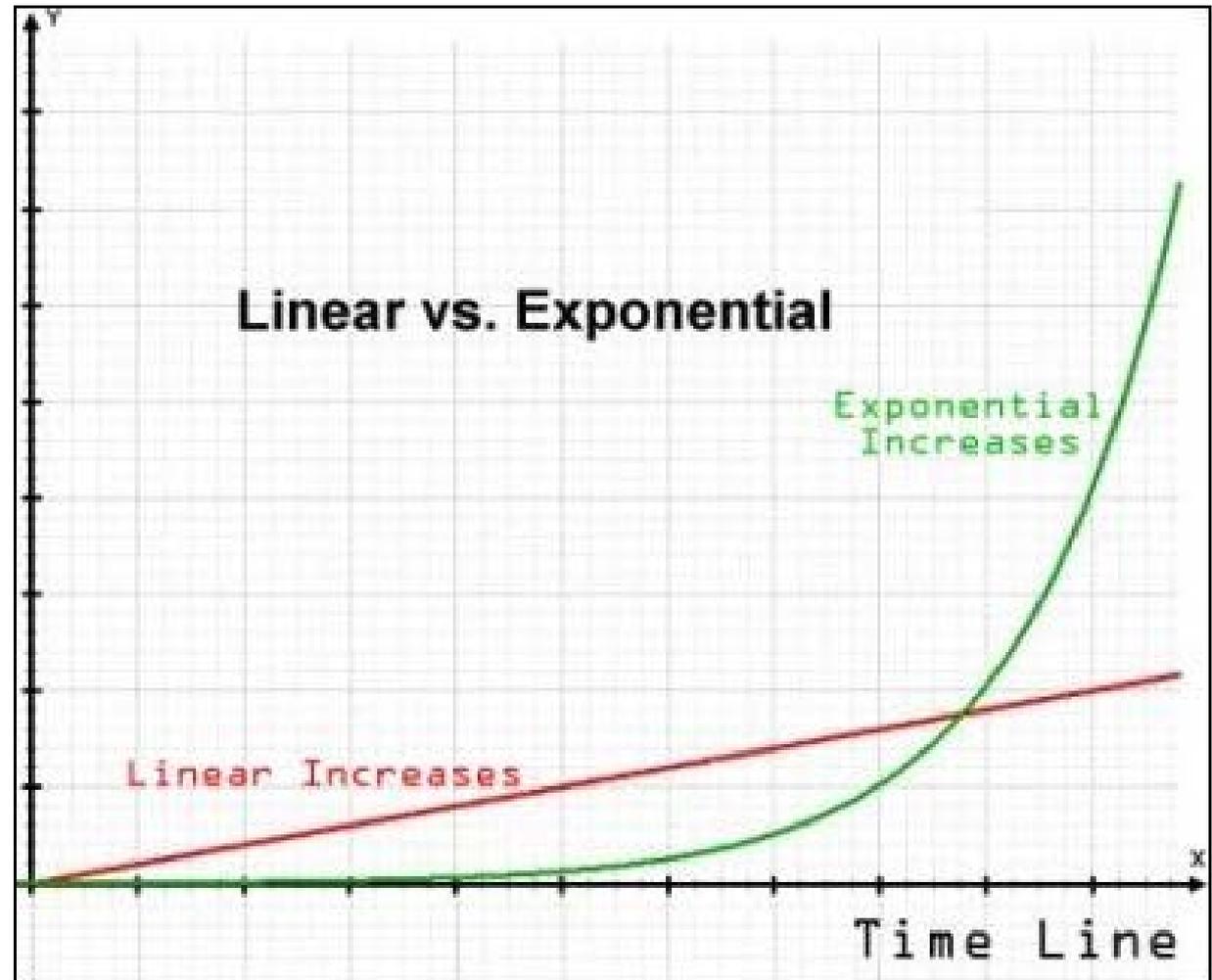
# National Grid's Advanced Data & Analytics Team



# Why?: People are Poor Predictors

“Most people overestimate what they can do in one year and underestimate what can happen in ten years.”

— Bill Gates



# Change Happens Quickly

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**Easter morning 1900: 5<sup>th</sup> Ave, New York City. Spot the automobile.**



Source: US National Archives.

**Easter morning 1913: 5<sup>th</sup> Ave, New York City. Spot the horse.**



Source: George Grantham Bain Collection.

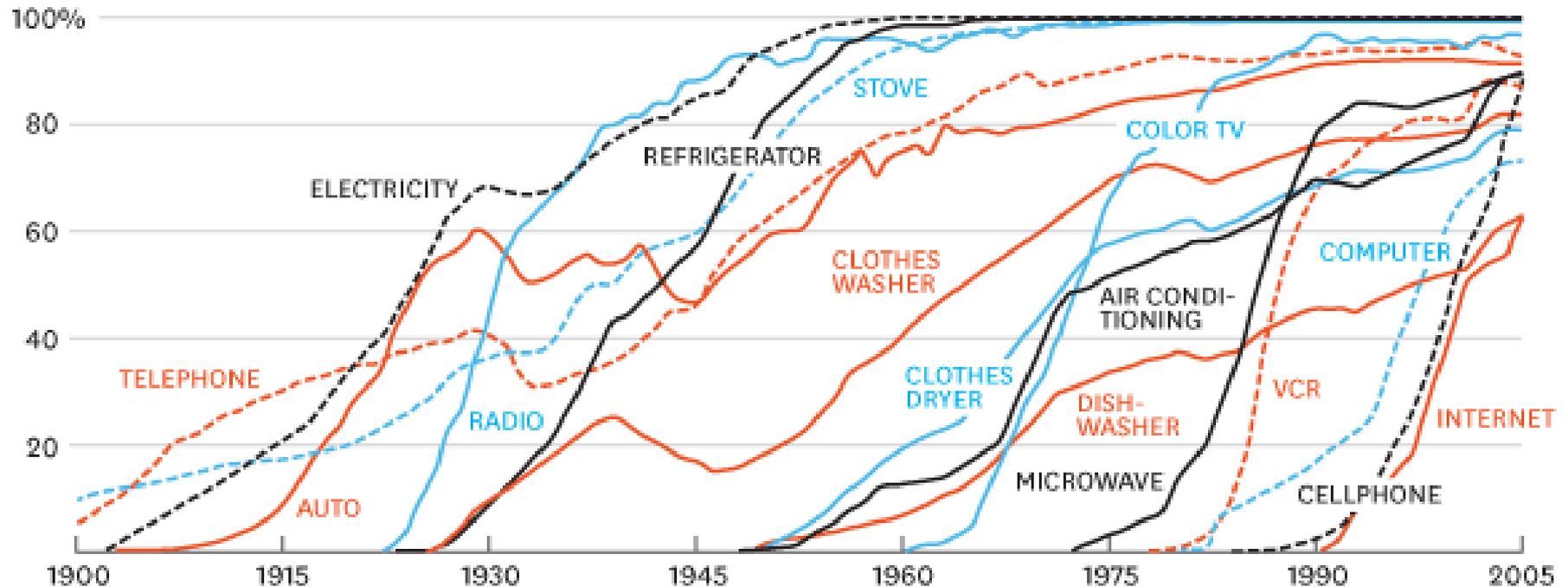
# Change is Only Accelerating

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## CONSUMPTION SPREADS FASTER TODAY

PERCENT OF U.S. HOUSEHOLDS



SOURCE MICHAEL FELTON, THE NEW YORK TIMES

HBR.ORG

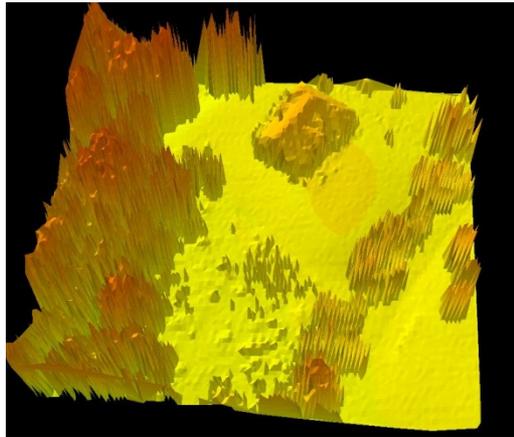


# Insights: PV Potential Analysis

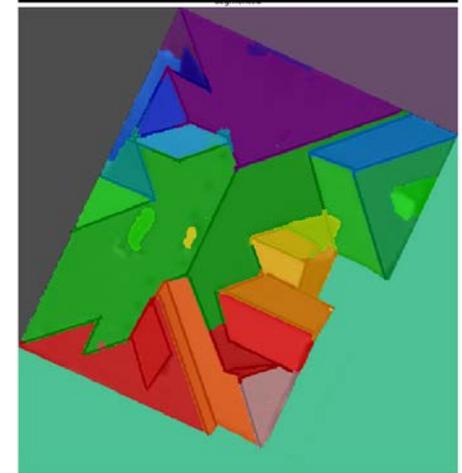
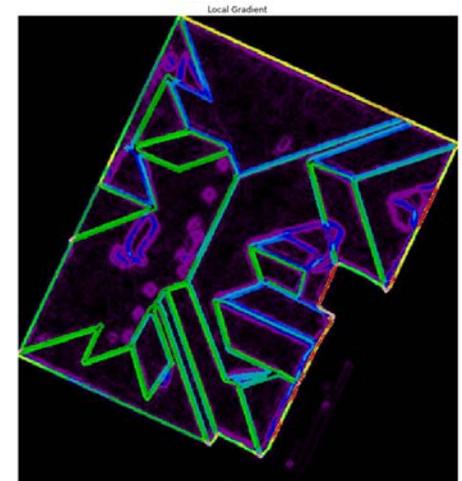
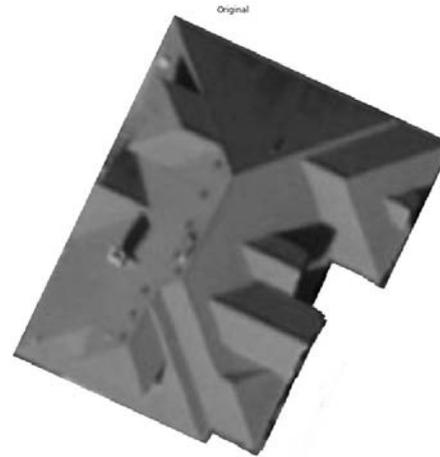
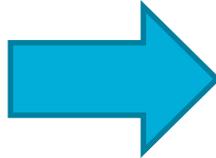
## Remote Sensing Data Analysis



High Resolution Aerial Image



High Resolution LiDAR Image



# Insights: PV Potential Analysis

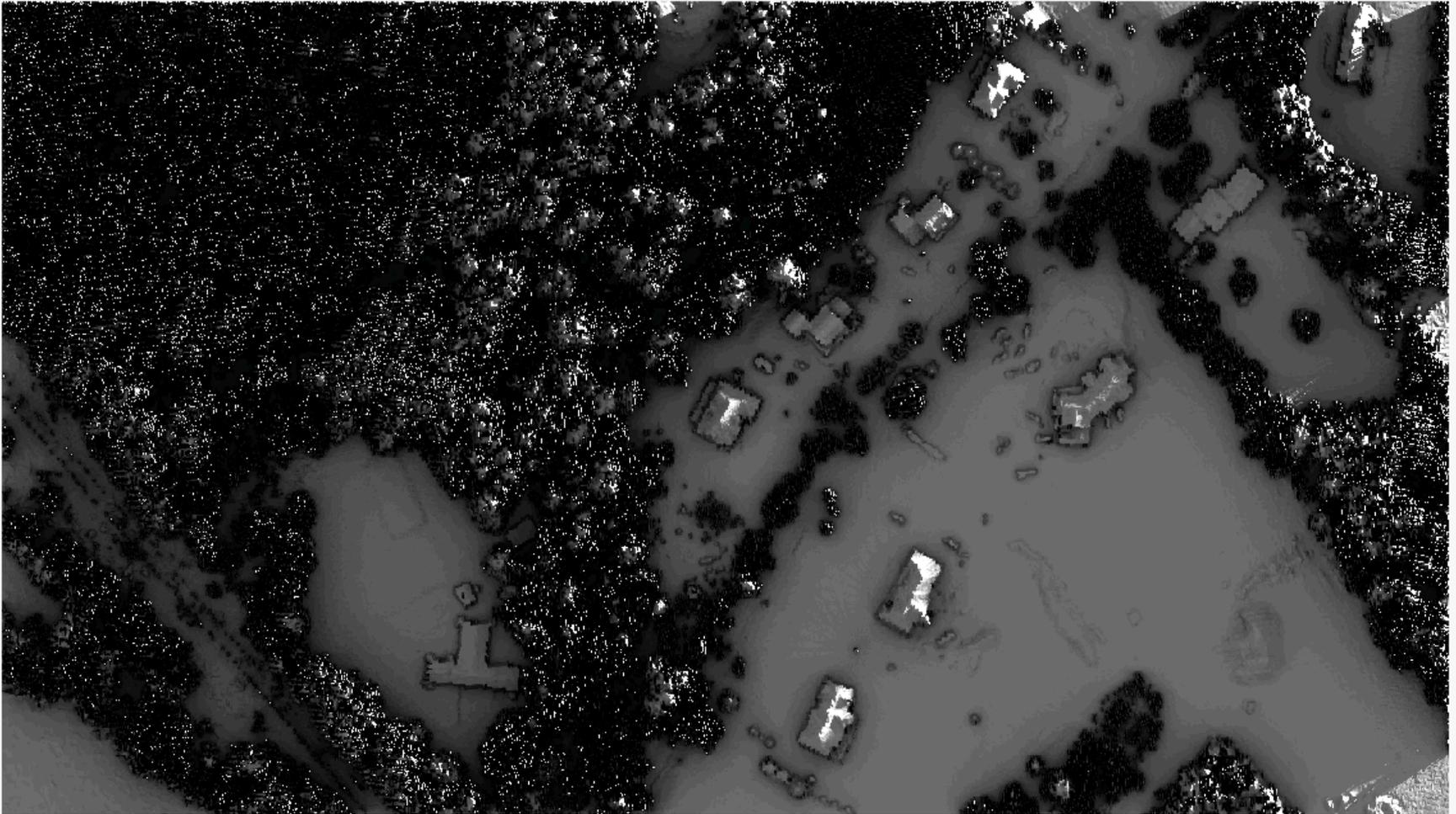
## Optimal PV System



# Insights: PV Potential Analysis

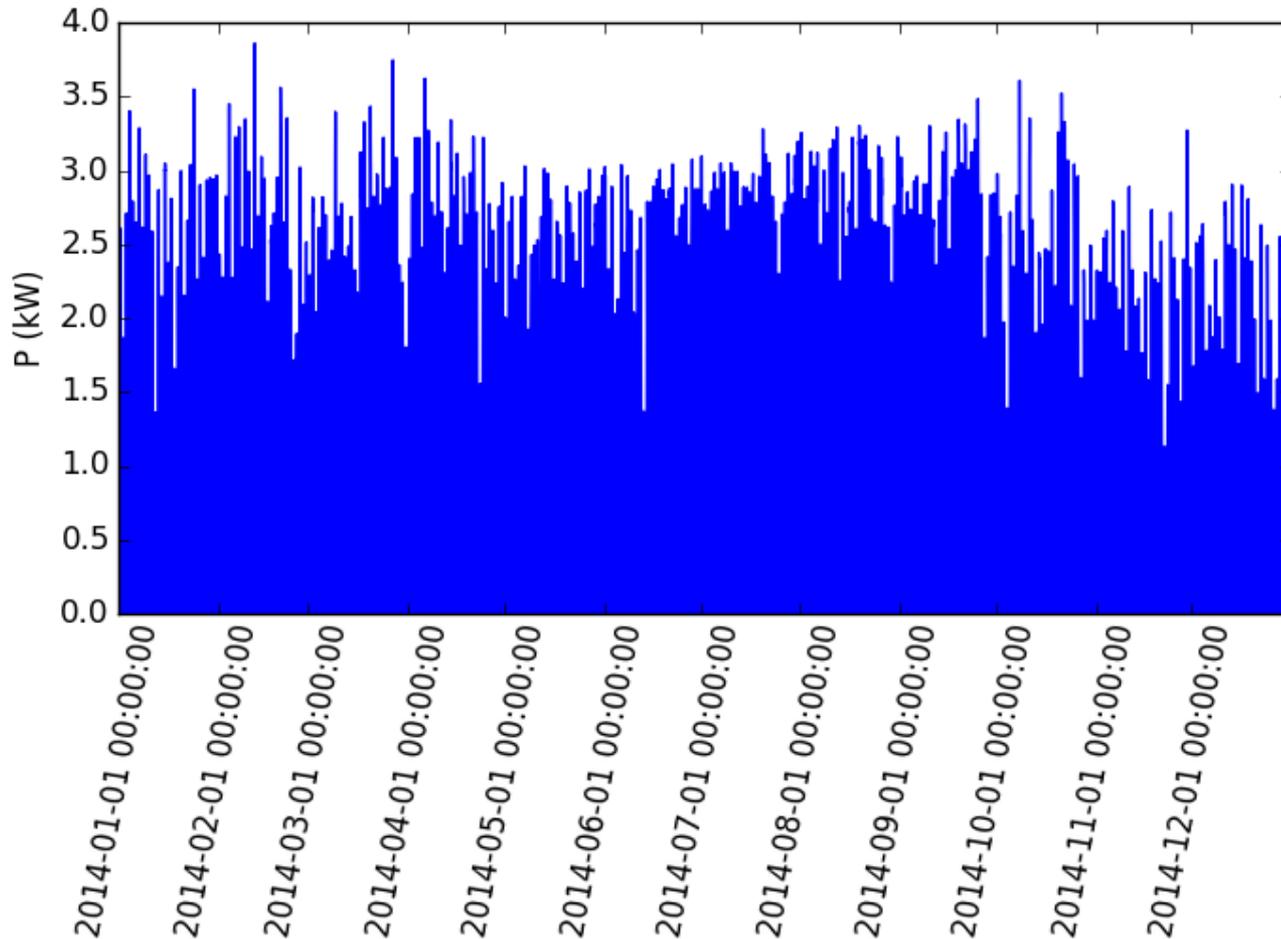
## 24 Hour Dynamic Radiance

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# Insights: PV Potential Analysis

## Annual PV System Performance



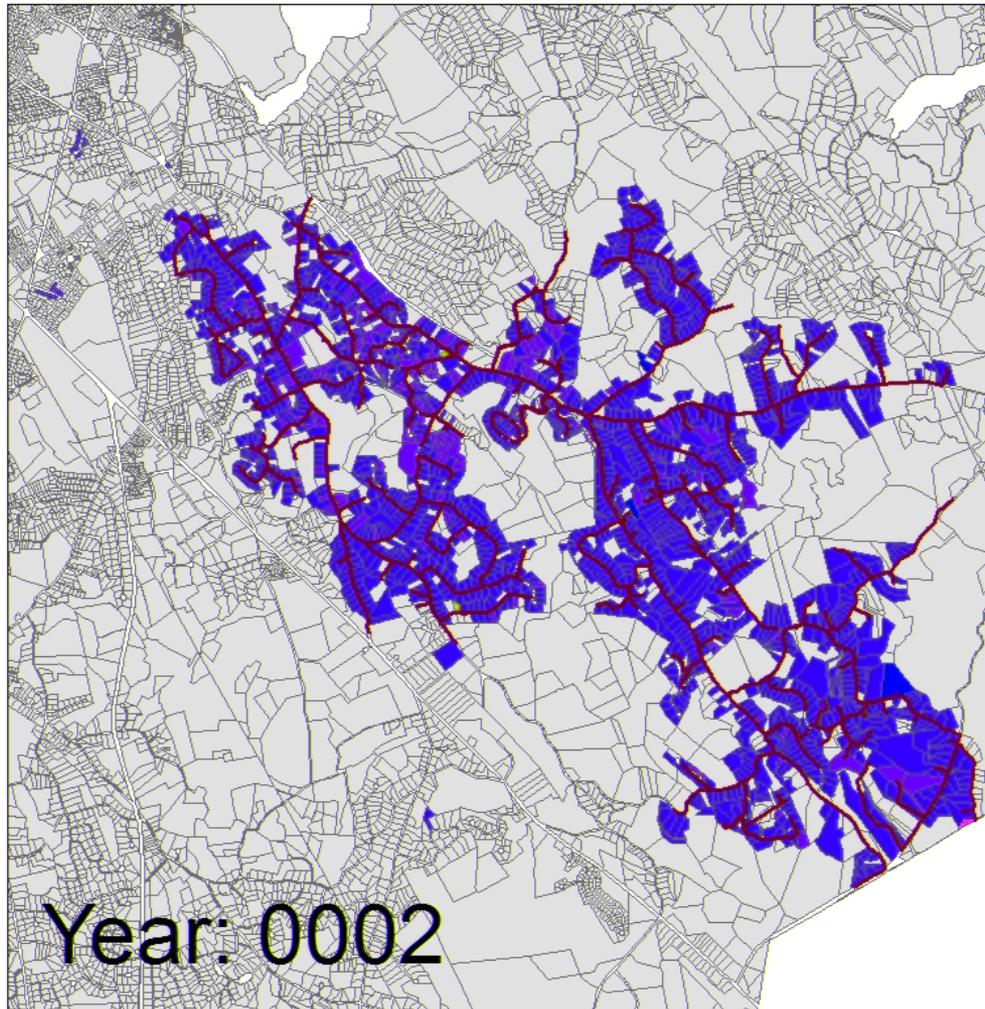
# Insights: PV Potential Analysis

## PV System Financial Analysis (20 Years)

	CASH	LOAN 50% DOWNPAYMENT	LOAN 0% DOWNPAYMENT	PPA LOW COST	PPA HIGH COST
Usage (kWh)	609,422	609,422	609,422	609,422	609,422
Nameplate (kW)	6.7	6.7	6.7	6.7	6.7
PV Production (kWh)	140,765	140,765	140,765	140,765	140,765
PV System Cost (\$)	27,885	27,885	27,885	27,885	27,885
Avoided Cost (\$)	22,891	22,891	22,891	22,891	22,891
Total Cost (System + Cashflow) (\$)	10,126	11,025	11,923	12,214	47,374
Net Gain (Rev - Cost) (\$)	12,765	11,867	10,968	10,677	-24,483
NPV (\$)	6,182	9,112	12,041	7,444	-24,031
Years to Breakeven	5	6	8		
LACE (\$/Kwh)	0.163	0.163	0.163	0.163	0.163
LCOE (\$/kWh)	0.072	0.078	0.085	0.087	0.337

# Insights: PV Potential Analysis

## Feeder-Level Rooftop PV System Adoption Likelihood



### Dynamic Likelihood

Feeder  
05\_14\_56L2

#### Legend

— Feeder

#### Likelihood

- 0% - 10%
- 11% - 20%
- 21% - 30%
- 31% - 40%
- 41% - 50%
- 51% - 60%
- 61% - 70%
- 71% - 80%
- 81% - 90%
- 91% - 100%
- Adopter