October 2

EV READINESS ROAD MAP

Jeffrey Elsey and Robert Ferrin

Kimley»Horn

CPTA

Jeffrey Elsey

Parking & Mobility Specialist

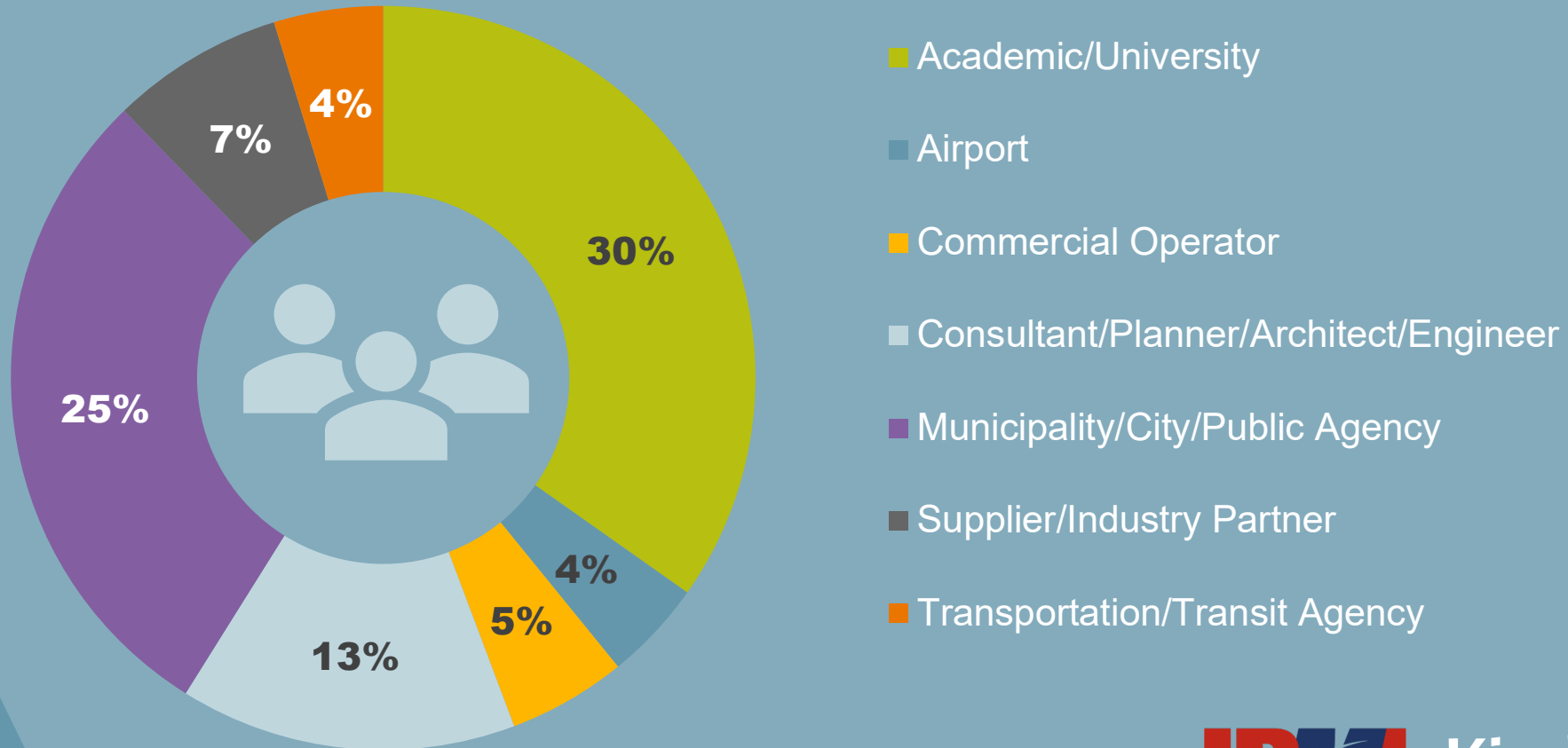**Robert Ferrin**

Parking & Mobility Specialist

Kimley»Horn

WHAT IS EV READINESS?

EV Readiness is defined as a collection of strategies, policies, and actions that empower a community to support the deployment of plug-in electric vehicles and charging infrastructure, and, as a result, derive the associated benefits.

STATE OF THE MARKET AND INDUSTRY

Key findings from the 2023 IPMI EV Readiness Survey

- Academic/University
- Airport
- Commercial Operator
- Consultant/Planner/Architect/Engineer
- Municipality/City/Public Agency
- Supplier/Industry Partner
- Transportation/Transit Agency

Chart values: 30%, 4%, 5%, 13%, 25%, 7%, 4%

4

2023 IPMI EV READINESS SURVEY

Reach and Statistics
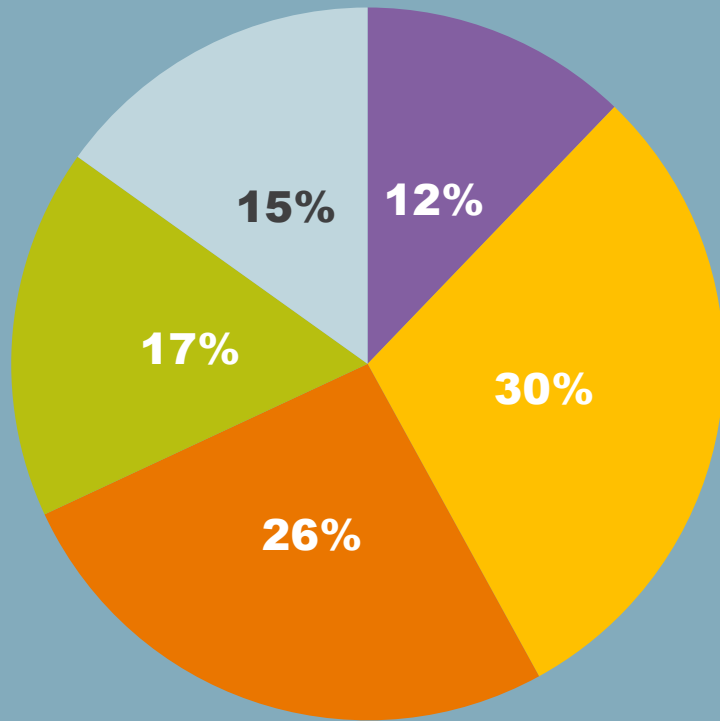
More than 3,000,000 parking spaces

- 86% in off-street facilities

- Over 220 parking owners and operators

- Nearly 90 universities and academic institutions

- More than 80 cities, municipalities, and transit agencies

More than 3,000 deployments and 125,000 ports

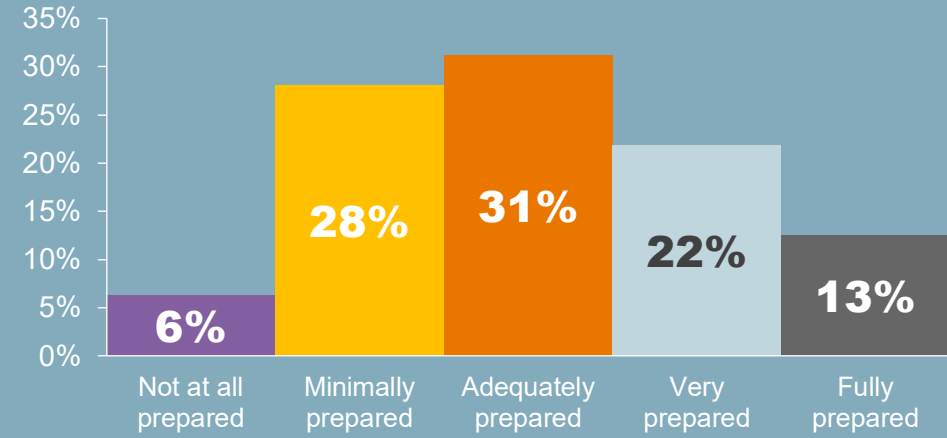**Patrons:** More than 900 EVSE deployments with nearly 120,000 public and private sector ports

Fleets: More than 2,300 fleet deployments with over 6,000 spaces/ports

IPMI
International Parking & Mobility Institute

Kimley»Horn

KEY FINDINGS

Pie chart (overall):
- Not at all prepared: 12%
- Minimally prepared: 30%
- Adequately prepared: 26%
- Very prepared: 17%
- Fully prepared: 15%

MUNICIPALITIES
- Not at all prepared: 6%
- Minimally prepared: 28%
- Adequately prepared: 31%
- Very prepared: 22%
- Fully prepared: 13%

UNIVERSITIES
- Not at all prepared: 13%
- Minimally prepared: 35%
- Adequately prepared: 27%
- Very prepared: 17%
- Fully prepared: 8%

IPMI
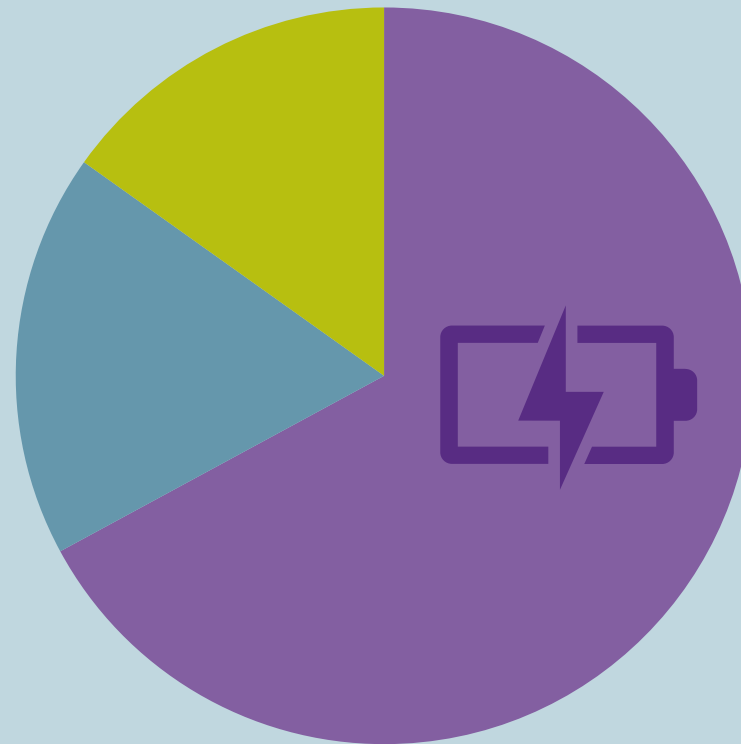International Parking & Mobility Institute

Kimley»Horn
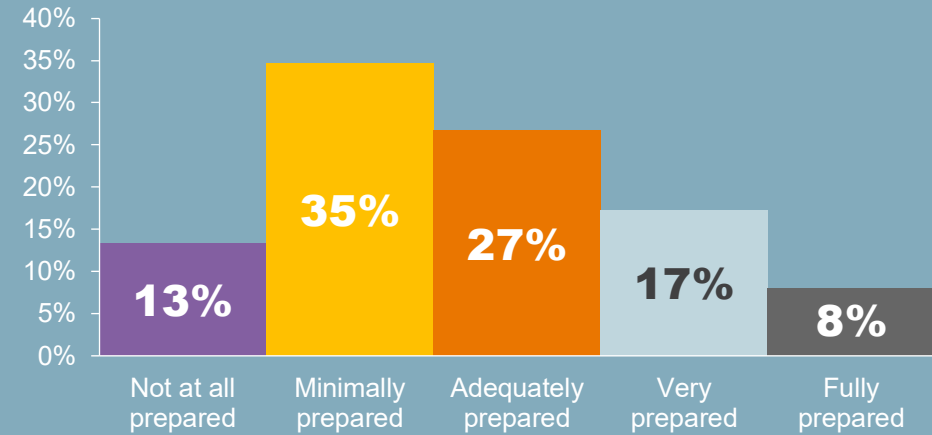
POLICY DIRECTIVES IN THE SUPPORT OF EVSE?

Not supportive 15%

Universities: 9%
Municipalities 12%
Commercial Operators 9%

Policies and programs indirectly support 18%

Universities: 23%
Municipalities 14%
Commercial Operators 9%

Policies and programs directly support 67%

Universities: 72%
Municipalities 65%
Commercial Operators 82%

IPMI
International Parking & Mobility Institute

Kimley»Horn

FUNDING SOURCES

Funding Source	Percentage
General operating/capital budget	80%
Federal programs	42%
State programs	35%
Public utility programs	26%
Other programs	20%
Strategic partnerships	14%
Other	10%
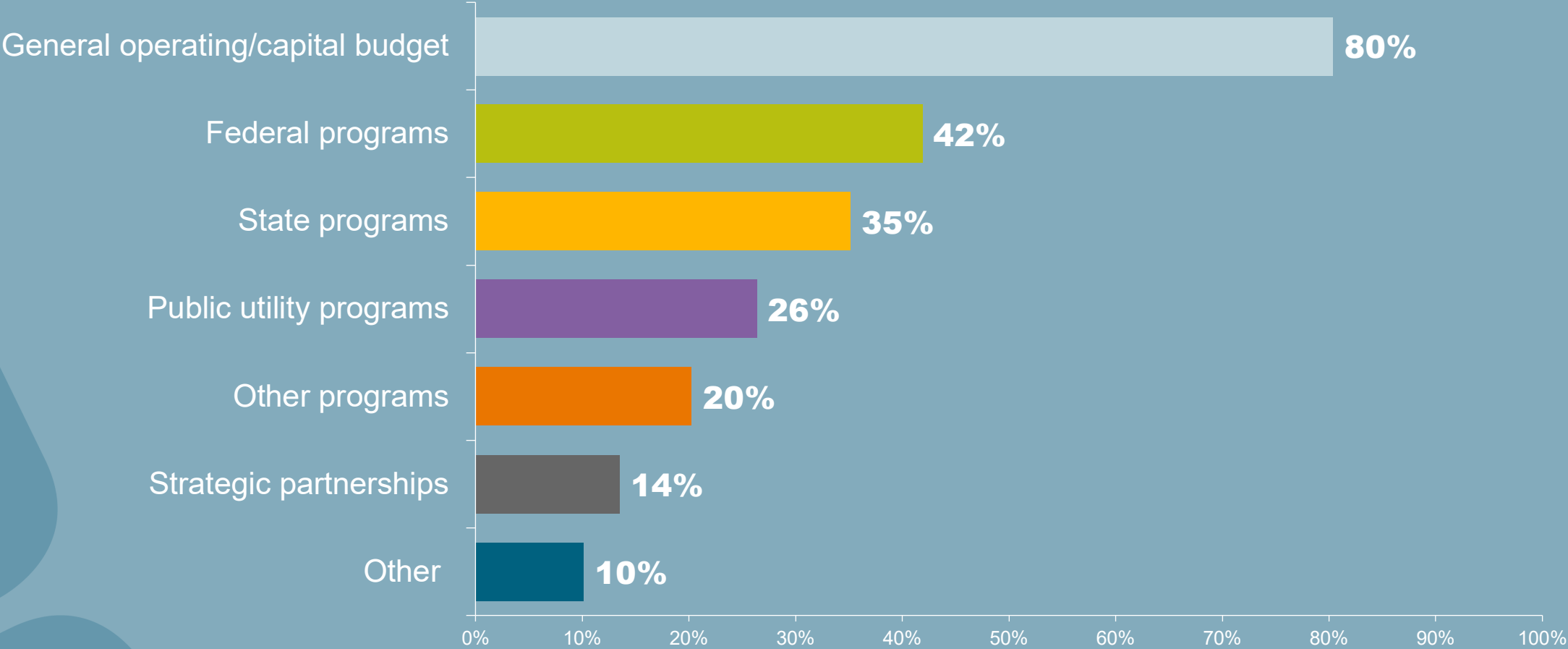
CHARGING TO CHARGE: CUSTOMERS

Category	Percentage
Provided at no cost	32%
Charging for fee added to parking cost	20%
Offer both free and paid options	16%
Charging fees included in parking cost	14%
Parking fees included in charging cost	10%
Parking for a fee added to charging cost	6%
Unsure	2%
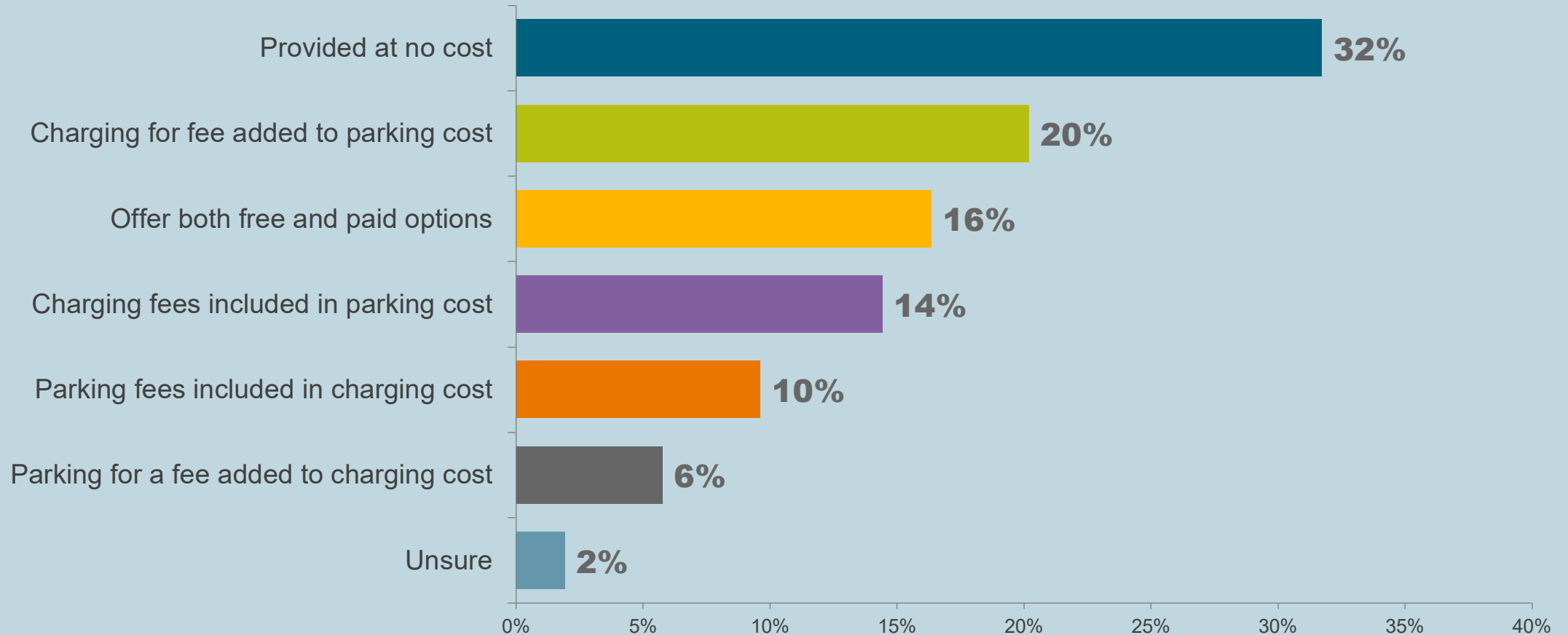
CHALLENGES AND BARRIERS

EVSE for Patrons and Fleets: Explore potential challenges and barriers and how to overcome them through successful EVSE implementation and programming.

1. Cost of equipment & budget impacts

2. Physical site & facility constraints

3. Utility coordination & power sources

4. Identifying & obtaining funding

5. Managing & maintaining EVSE infrastructure

Cost of equipment/budget

Physical site/facility constraints

Utility coordination/power sources

Identifying and obtaining funding

Managing/maintaining infrastructure

Educating stakeholders

Customer interface / UX

IT integration

Training staff

Selecting hardware

Selecting software

Safety considerations

Lack of policies

IPMI
International Parking & Mobility Institute

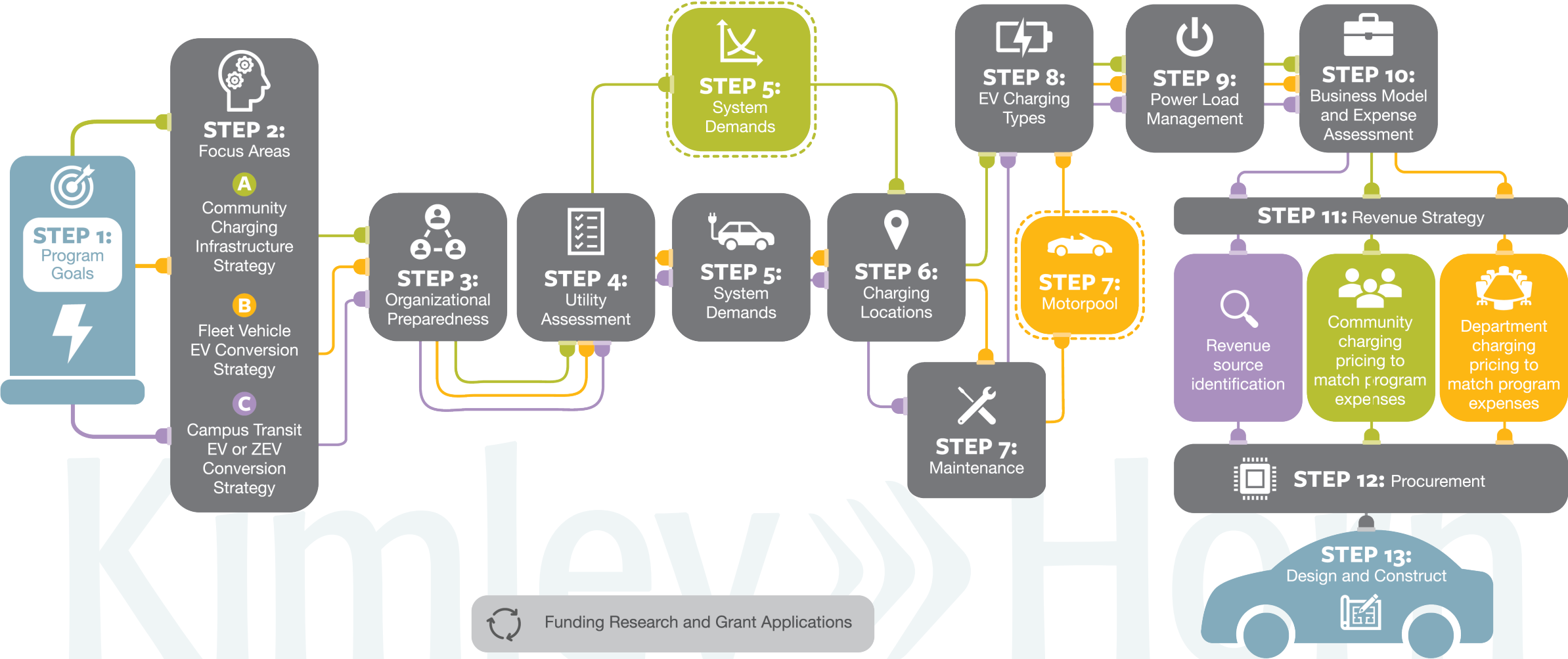Kimley»Horn

CHALLENGES AND BARRIERS

EVSE CAPACITY INCREASES

- Cost of equipment/budget
- Physical site/facility constraints
- Utility coordination/power sources
- Identifying and obtaining funding
- Managing/maintaining infrastructure
- Educating stakeholders
- Customer interface / UX
- IT integration
- Training staff
- Selecting hardware
- Selecting software
- Safety considerations
- Lack of policies

EV FLEET DEPLOYMENT

- Sourcing/Availability Vehicles
- Identifying and Obtaining Funding
- Physical site/facility constraints
- Utility coordination/power sources
- Educating stakeholders
- Selecting vehicles
- IT Integration
- Managing/Maintaining Vehicles
- Selecting software
- Training staff
- Safety considerations
- Lack of policies

11

EV READINESS ROAD MAP

STEP 1: Program Goals

STEP 2: Focus Areas
- **A** Community Charging Infrastructure Strategy
- **B** Fleet Vehicle EV Conversion Strategy
- **C** Campus Transit EV or ZEV Conversion Strategy

STEP 3: Organizational Preparedness

STEP 4: Utility Assessment

STEP 5: System Demands

STEP 5: System Demands

STEP 6: Charging Locations

STEP 7: Maintenance

STEP 7: Motorpool

STEP 8: EV Charging Types

STEP 9: Power Load Management

STEP 10: Business Model and Expense Assessment

STEP 11: Revenue Strategy
- Revenue source identification
- Community charging pricing to match program expenses
- Department charging pricing to match program expenses

STEP 12: Procurement

STEP 13: Design and Construct

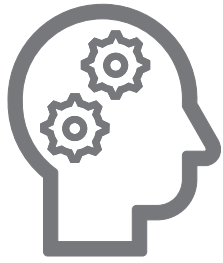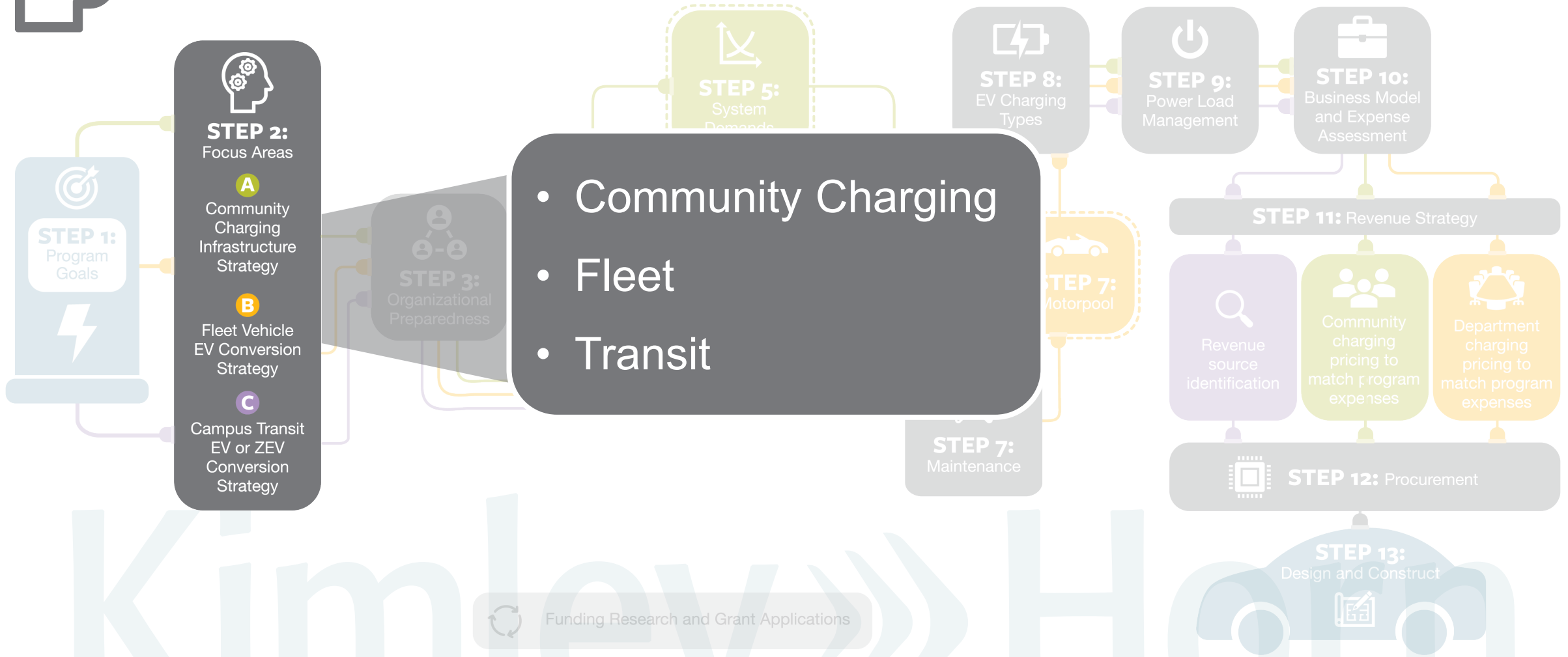Funding Research and Grant Applications

STEP 1: Program Goals

- Sustainability Targets
- Regulatory Requirements
- Other Underlying Considerations

STEP 2: Focus Areas

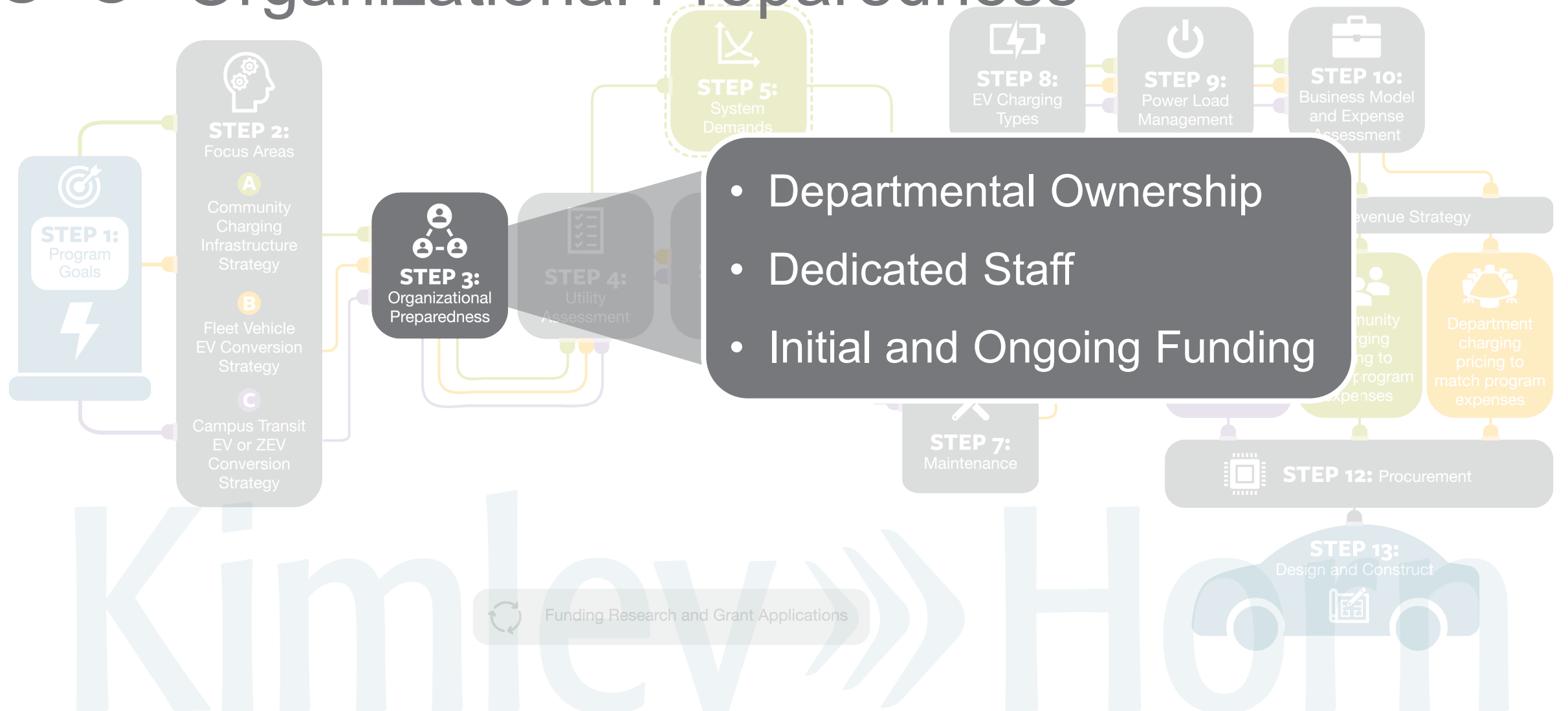STEP 1: Program Goals

STEP 2: Focus Areas

A Community Charging Infrastructure Strategy

B Fleet Vehicle EV Conversion Strategy

C Campus Transit EV or ZEV Conversion Strategy

STEP 3: Organizational Preparedness

STEP 5: System Demands

STEP 7: Motorpool

STEP 7: Maintenance

STEP 8: EV Charging Types

STEP 9: Power Load Management

STEP 10: Business Model and Expense Assessment

STEP 11: Revenue Strategy

Revenue source identification

Community charging pricing to match program expenses

Department charging pricing to match program expenses

STEP 12: Procurement

STEP 13: Design and Construct

Funding Research and Grant Applications

- Community Charging
- Fleet
- Transit

14

STEP 3:
Organizational Preparedness

STEP 1: Program Goals

STEP 2: Focus Areas
- A Community Charging Infrastructure Strategy
- B Fleet Vehicle EV Conversion Strategy
- C Campus Transit EV or ZEV Conversion Strategy
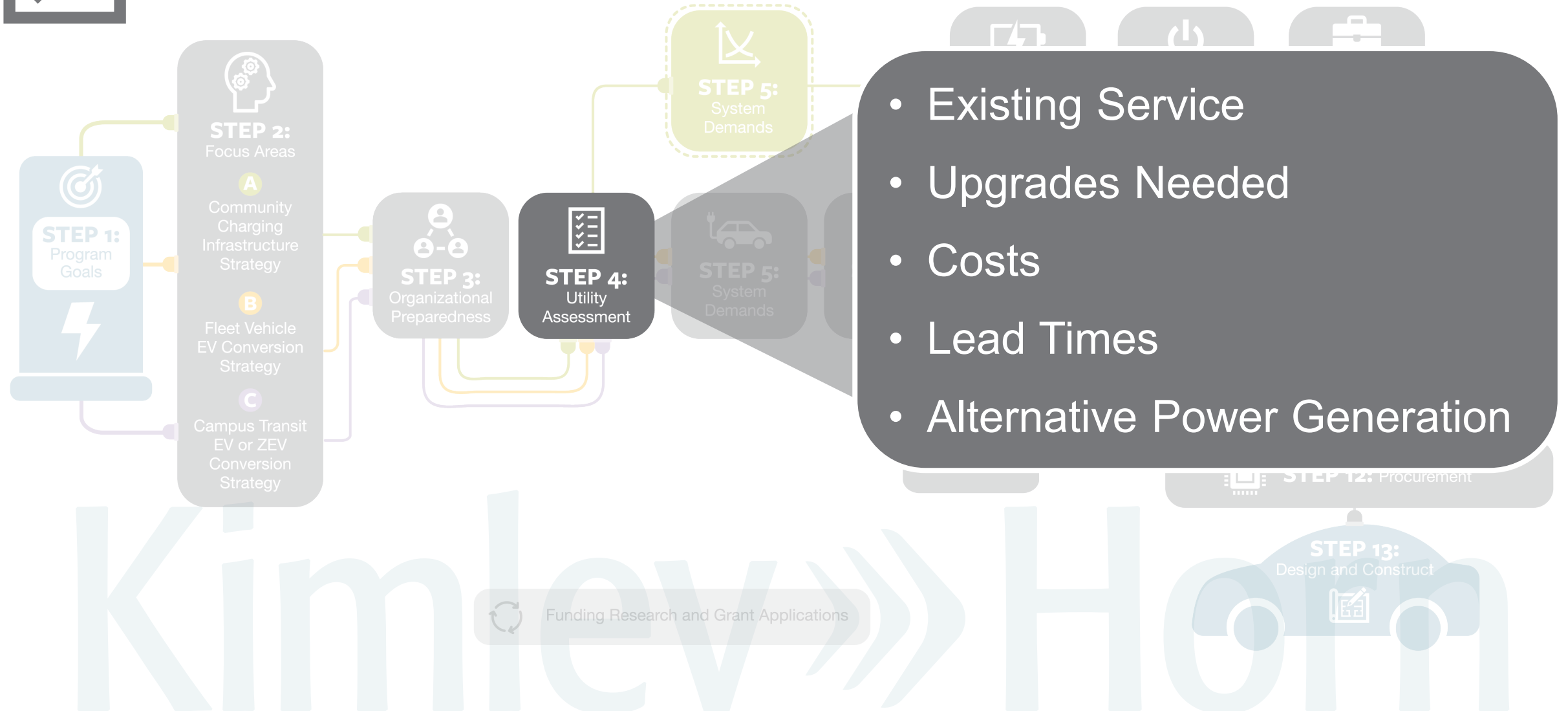
STEP 3: Organizational Preparedness

STEP 4: Utility Assessment

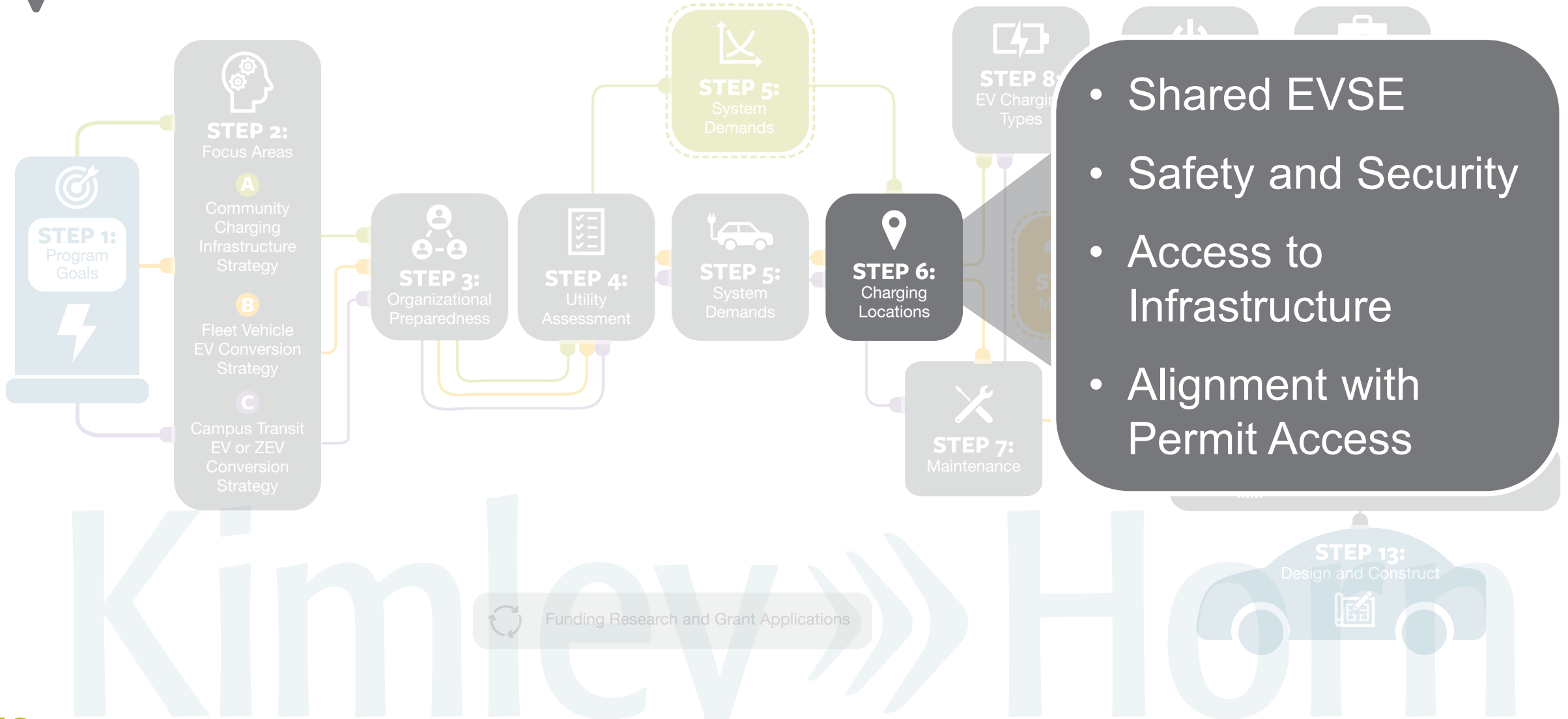STEP 5: System Demands

STEP 7: Maintenance

STEP 8: EV Charging Types

STEP 9: Power Load Management

STEP 10: Business Model and Expense Assessment

STEP 12: Procurement

STEP 13: Design and Construct

Funding Research and Grant Applications

- Departmental Ownership
- Dedicated Staff
- Initial and Ongoing Funding

Kimley»Horn

STEP 4: Utility Assessment

- Existing Service
- Upgrades Needed
- Costs
- Lead Times
- Alternative Power Generation

STEP 1: Program Goals

STEP 2: Focus Areas
- **A** Community Charging Infrastructure Strategy
- **B** Fleet Vehicle EV Conversion Strategy
- **C** Campus Transit EV or ZEV Conversion Strategy

STEP 3: Organizational Preparedness

STEP 4: Utility Assessment

STEP 5: System Demands

STEP 12: Procurement

STEP 13: Design and Construct

Funding Research and Grant Applications

STEP 6: Charging Locations

- Shared EVSE
- Safety and Security
- Access to Infrastructure
- Alignment with Permit Access

STEP 1: Program Goals

STEP 2: Focus Areas
- A Community Charging Infrastructure Strategy
- B Fleet Vehicle EV Conversion Strategy
- C Campus Transit EV or ZEV Conversion Strategy

STEP 3: Organizational Preparedness

STEP 4: Utility Assessment

STEP 5: System Demands

STEP 6: Charging Locations

STEP 7: Maintenance

STEP 8: EV Charging Types

STEP 13: Design and Construct

Funding Research and Grant Applications

18

STEP 7:
Maintenance and Motorpool

- Maintenance Protocols

- Motorpool Locations and Considerations

STEP 1: Program Goals

STEP 2: Focus Areas

EV or ZEV Conversion Strategy

STEP 5: System Demands

STEP 6: Charging Locations

STEP 7: Motorpool

STEP 7: Maintenance

STEP 8: EV Charging Types

STEP 9: Power Load Management

STEP 10: Business Model and Expense Assessment

STEP 11: Revenue Strategy

Revenue source identification

Community charging pricing to match program expenses

Department charging pricing to match program expenses

STEP 12: Procurement

STEP 13: Design and Construct

Funding Research and Grant Applications

19

STEP 8: EV Charging Types

- Charging Duration Needs
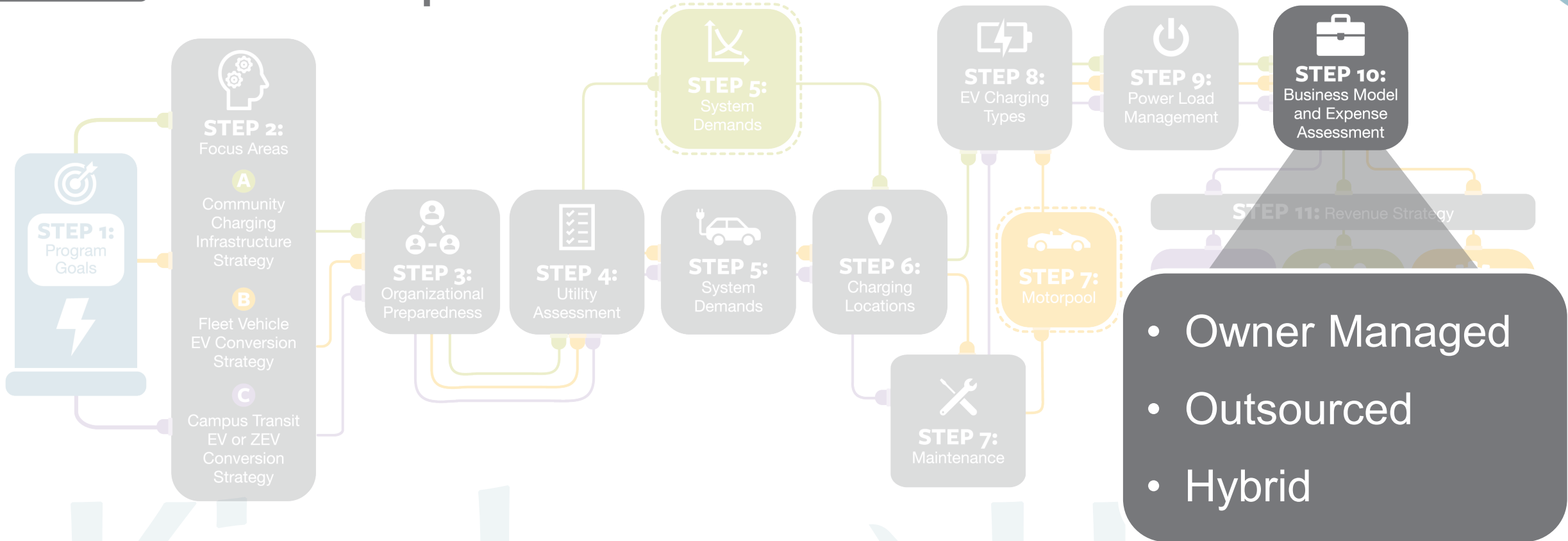- Cost Consideration
- Infrastructure Constraints

STEP 9: Power Load Management

- Balancing Power Load to Reduce Infrastructure Needs
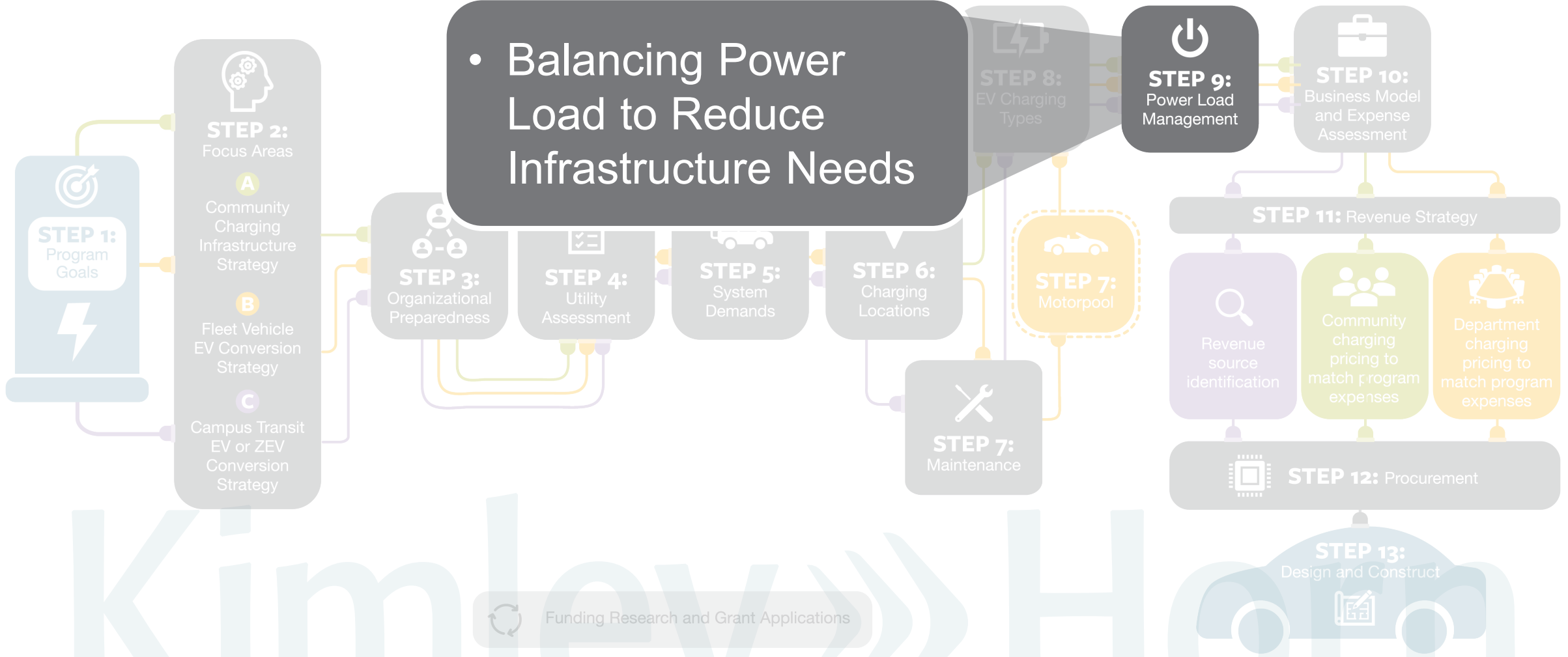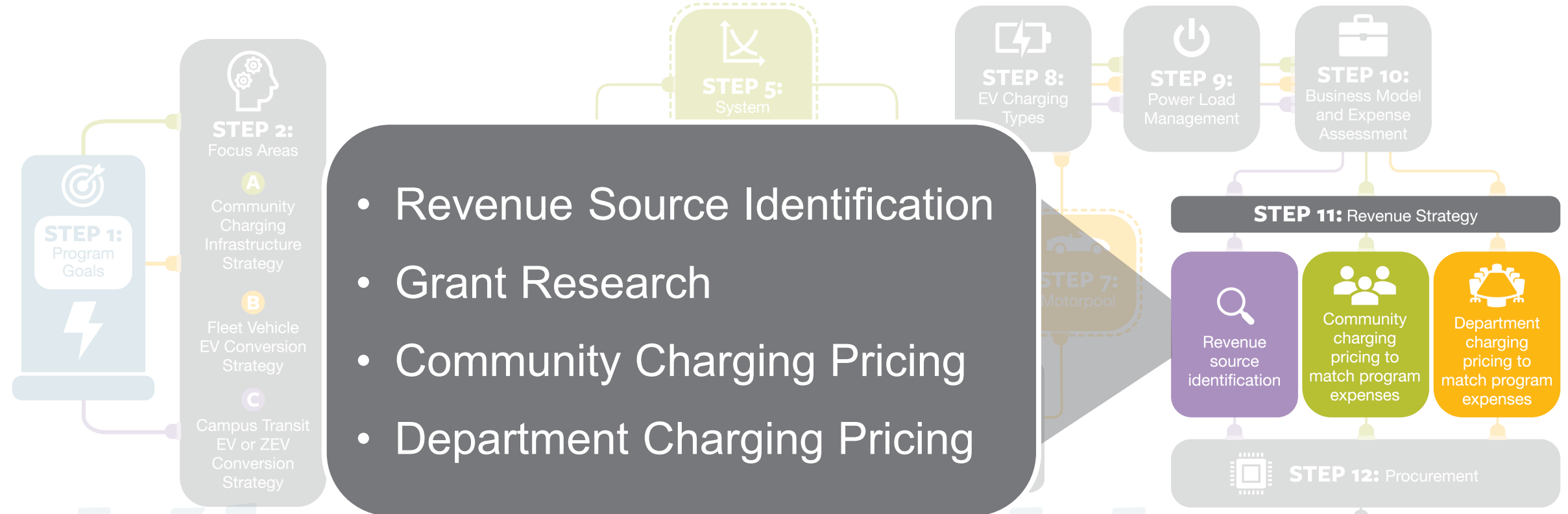
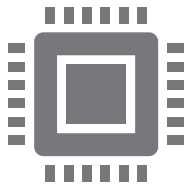# STEP 10: Business Model and Expense Assessment


- Owner Managed
- Outsourced
- Hybrid

STEP 11: Revenue Strategy

- Revenue Source Identification
- Grant Research
- Community Charging Pricing
- Department Charging Pricing

STEP 1: Program Goals

STEP 2: Focus Areas
- **A** Community Charging Infrastructure Strategy
- **B** Fleet Vehicle EV Conversion Strategy
- **C** Campus Transit EV or ZEV Conversion Strategy

STEP 5: System

STEP 7: Motorpool

STEP 8: EV Charging Types

STEP 9: Power Load Management

STEP 10: Business Model and Expense Assessment

STEP 11: Revenue Strategy
- Revenue source identification
- Community charging pricing to match program expenses
- Department charging pricing to match program expenses

STEP 12: Procurement

STEP 13: Design and Construct

Funding Research and Grant Applications

STEP 12: Procurement
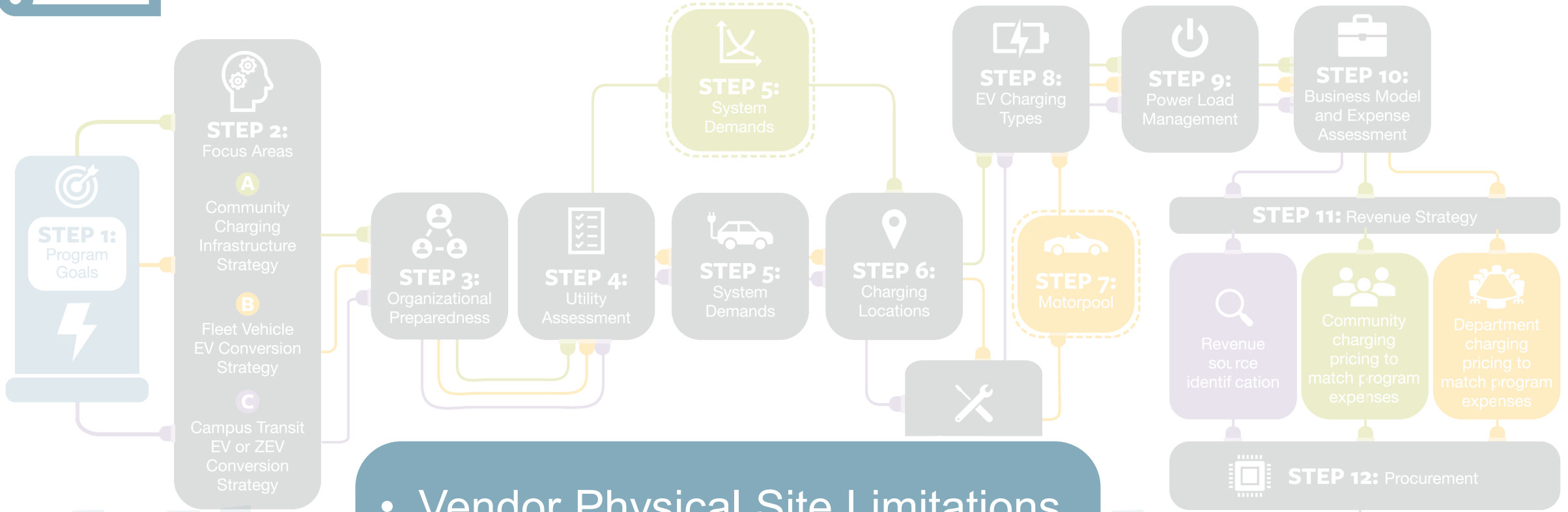

- Vendor Options
- IT Integrations
- Lead Times

STEP 12: Procurement
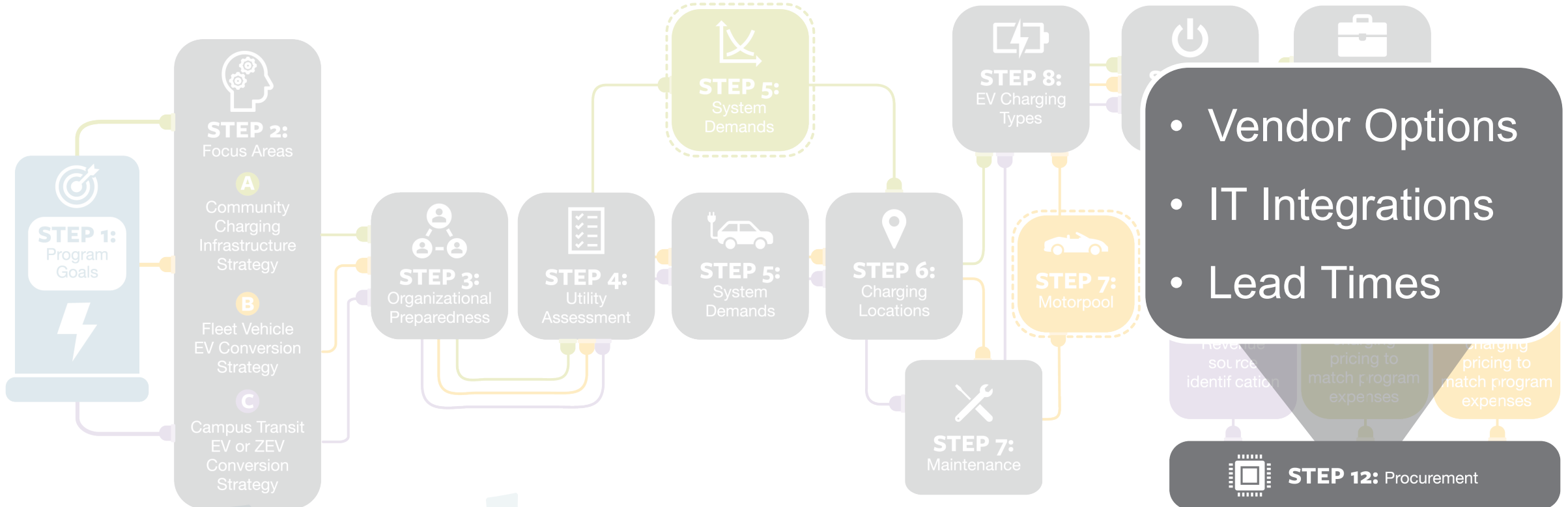
STEP 13: Design and Construct

- Vendor Physical Site Limitations
- ADA Considerations
- Construction Management

QUESTIONS / DISCUSSION