PROJECT GOALS

1. Establish clear guidance for development in urbanized areas regarding strategies to adapt to climate change-related impacts without compromising the quality of the urban experience. Climate-related impacts include increase in heat, flooding from rainfall events, and surface and groundwater inundation due to sea level rise.

2. Develop adaptation recommendations based on best practices pertaining to site buildup, building designs, block frameworks, etc. in urban areas; and,

3. Create a user friendly and graphic-heavy guidance document that can be used as a reference by large and small developers as they prepare project proposals.
Action 14: Establish Future Conditions Climate Resilience Design Guidelines

Forward-looking Design Parameters for:
- Heat
- Wind
- Flooding
- Sea Level Rise
- Materials and Reuse

+ Waikīkī Special District Design Guidelines,
  TOD Design Guidelines
LITERATURE REVIEW

1. Assemble local, national, and international examples pertinent to Honolulu.

2. Highlight relevant guidelines/recommendations that may be relevant to Honolulu.

3. Review recommended guidelines to see what is currently allowed here, and what policies need to be changed in order to foster implementation.
INTERNATIONAL & NATIONAL PRECEDENTS:
SEA LEVEL RISE ADAPTATION AND STORM RESILIENCE

AMERICAS
- Vancouver
- San Francisco
- San Rafael
- New Orleans
- Miami
- Fort Lauderdale
- Georgetown
- Annapolis
- Norfolk
- Bridgeport
- New York
- Hoboken
- Staten Island
- Boston
- Toronto
- Calgary
- Toronto

EUROPE / AFRICA
- Copenhagen
- Rotterdam
- Nijmegen
- Hull
- Hamburg
- Venice
- Lagos

ASIA / AUSTRALIA
- Hong Kong
- Singapore
- Shanghai
- Tokyo
- Jakarta
- New Zealand
NEW YORK RETROFITS & FREEBOARD

Multi-family and commercial buildings require 100-year + 12”

Critical facilities require 100-year + 24” + (6” to 36”) depends on lifecycle

Non-critical facilities require 100-year + 12” + (6” to 36”) depends on lifecycle
The City of Miami Beach is currently exploring ways to make existing buildings and adjacent infrastructure more resilient.

Many properties fall within an historic district.

Working on resilient building design guidelines and updates to zoning code to allow for raising of buildings.

Raising buildings provides challenges related to transitions from street to sidewalk to building.
HafenCity is partially protected against storm surges and rising seas.

Old buildings have been raised; new buildings adhere to flood-resilient design standards.

The city built the roads and open public spaces on terraces more than 25 feet above normal high tide.

Developers were permitted to build at this level, but were required to waterproof the structures all the way up to, and have entrances at, the higher street level.
Using a system-wide source-pathway-receptor approach, Singapore has managed to develop and implement new drainage standards to decrease flood risk.
LOCAL POLICY & REGULATORY REFERENCES

GREENING IWILEI AND KAPALAMA

• Mayor’s Directive on Climate Change (18-02)
• Hawai‘i Sea Level Rise Vulnerability and Adaptation Report
• Department of Facilities Maintenance Storm Water Management Plan
• Department of Facilities Maintenance Green Infrastructure Design Guidelines
• Department of Transportation Services Complete Streets Design Manual
• Department of Planning and Permitting: Land Use Ordinance (Draft Update)
  Plan Review Use Permit Guidelines
  Planned Development Permit Guidelines
  Special District Design Guidelines
  SMA Use Permits (major/minor)
  Shoreline Setback Ordinance (Draft Update)
  Subdivision Permit Requirements/Workflow
  Site Development Division Submittal
• Requirements
  Building Permit Checklists (residential/commercial)
  Rules Relating to Water Quality
  Storm Water BMP Guide for New and Redevelopment
Purpose:
Compare National/International best practices with local plans/regulations, identify gaps/needs, opportunities for coordination.

Information Sharing:
- What existing regulations should be referenced in the guidelines?
- What initiatives are ongoing?
- What’s on the horizon?

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GUIDANCE DOCUMENT FOR DEVELOPERS

- Will communicate resilient design strategies for buildings and public realm transitions using simple, intuitive imagery
- Focus on urban development types representative of new development/redevelopment trends in TOD areas
- Will show scalable solutions for different building types
- Will reference existing regulations and guidance; highlight upcoming regulatory changes
BUILDING TYPOLOGIES:
POINT TOWER & PODIUM (EXAMPLES: THE COLLECTION, KEAOUHOU LANE)

Typical development characteristics:

- 8 – 40+ story tower on mixed use, multilevel podium structure
- Tower and podium is residential, office, or resort-related uses
- Parking, lobby, and ground floor retail in podium
- Elevator building and emergency stairs
- Exposed portions of parking structure wrapped by low or mid-rise residential building
- Considerable landscaping and pedestrian amenities between building facades and back of sidewalk.
- Frontage on a complete street
BUILDING TYPOLOGIES:

MID-RISE APARTMENT BUILDING (EXAMPLE: 400 KEAWE)

Typical development characteristics:
- 4–7 stories
- L-shaped, U-shaped, or perimeter residential building with courtyard
- Retail and/or elevated residential uses on first floor
- Wrapped parking structure or rear-sited parking structure
- Elevator building with emergency stairs
- Landscaping and pedestrian amenities between building facades and back of sidewalk
- Frontage on a complete street
BUILDING TYPOLOGIES:
MODERN WALK-UP (EXAMPLES THROUGHOUT URBAN HONOLULU)

Typical development characteristics:

- 2 – 3 stories
- Single-family, multilevel attached dwelling units
- Individual attached garages, detached garages, or tuck-under parking
- Frontage on a complete street
BUILDING TYPOLOGIES:

MULTI-TENANT COMMERCIAL (EXAMPLE: INTERNATIONAL MARKETPLACE)

Typical development characteristics:
- 1 – 3 stories
- Integrated parking structure or standalone rear-sited structure
- Street facing retail and/or indoor shopping mall
- Considerable landscaping and pedestrian amenities between building facades and back of sidewalk
- Frontage on a complete street
EXAMPLE GRAPHIC & RECOMMENDATIONS

- Design public realm transitions between building and street to provide welcoming pedestrian environment
- On-site detention/retention/infiltration for rainfall and flood events
- Floodable parking areas/courtyards
- Mitigate heat using green/blue/cool roofs, shade trees, awnings
- On-site water reuse and recycling
- Dry/wet floodproofing of uses on ground floors
- Elevate sensitive equipment/uses above first floor
- Floodproof uses below first floor
LOCAL EXAMPLES
LOCAL EXAMPLES

KEAUHOU LANE, SOUTH SHORE MARKET
**PROJECT SCHEDULE**

- **2019**
  - AUG: Coordination
  - SEP: Biweekly coordination meetings (or as needed)
  - OCT: Kickoff
  - NOV: Stakeholder Meetings
  - DEC: Literature Review
  - JAN: Agency Working Group
  - FEB: TOD Council Interviews

- **2020**
  - JAN: Agency Working Group
  - FEB: Summary of Findings

- **2021**
  - JAN: Draft Guidance
  - FEB: Final Guidance
MAHALO