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# UNINSURED RISK & PARAMETRICS

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# THE AIRPORT CHALLENGE

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## SECONDARY/TERTIARY KNOCK-ON EFFECTS

- Property damage and associated business interruption are only the immediate impacts.
  - Hurricane Harvey shut down 27 maritime ports, not all were damaged.
- Airports must also consider the contingent disruptions that impact the communities they serve.
  - Tourism declines
  - Disrupted power supplies
  - Impacted external infrastructure
  - Shifting economic hubs
  - Bond rating impacts
- Non-aeronautical revenue sources are increasingly important to operating budgets
- If the airport/port are operational, but the community is not, what financial recovery do you have?

# WHERE'S THE GAP?

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## EXPOSURES NOT COVERED

- Traditional Insurance
  - Requires direct physical loss by a covered peril
  - Utilizes a dollar amount, percentage or time element deductible
  - Includes a long adjustment process for proof of loss
  - Non-damage business interruption is not covered
- Federal/State Aid
  - Federal and State aid can be slow, burdensome and inefficient
    - Six years after Sandy, only 60% of the funds allocated had been deployed (as of 11/30/18)
  - Federal disaster programs specific exclude certain recoveries, such as lost revenue, which is particularly important to airports/ports.
    - After Hurricane Irma, Florida submitted ~\$50m of lost toll revenue for reimbursement from FEMA, which was quickly denied.

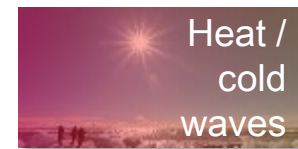
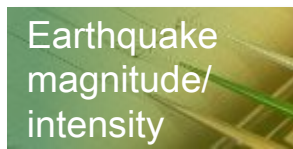
# INTRO TO PARAMETRICS

## REDUCING BURDEN, INCREASING COVERAGE

**Parametric insurance is an innovative risk transfer tool which acknowledges the true dynamics of risk**



Relies on **measurement** of a natural phenomenon or index, such as:



Payout of pre-defined amount is made when contractually agreed **threshold** of parameter/index is **exceeded** (e.g. intensity of EQ, windspeed or amount of rainfall)

# BENEFITS OF PARAMETRICS

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## PROVIDING VALUE BEYOND TRADITIONAL COVERAGE

- Rapid payout (2-4 weeks in most cases)
- Uninsurable risks can be covered (lost revenues, emergency costs, debt servicing costs, etc.)
- Flexibility in the use of the funds
- Transparency to both the Insured and Insurer
  - Use of independent 3<sup>rd</sup> party data
- Avoids adverse selection of risk

# COMPARING PROCESSES

With parametric insurance, the claim and settlement process is dramatically simplified.

## Parametric insurance



EVENT OCCURS

VERIFICATION  
OF TRIGGER

PAYOUT

CERTIFICATION  
OF LOSS

## Indemnity based insurance



EVENT OCCURS

DAMAGE  
ASSESSMENT

CLAIM  
SUBMITTED

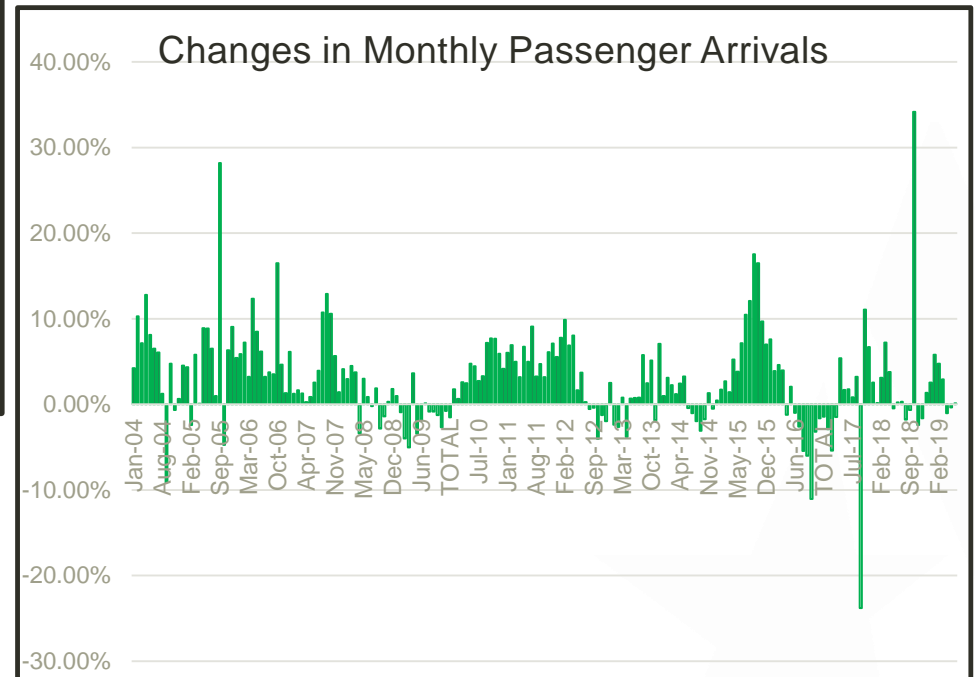
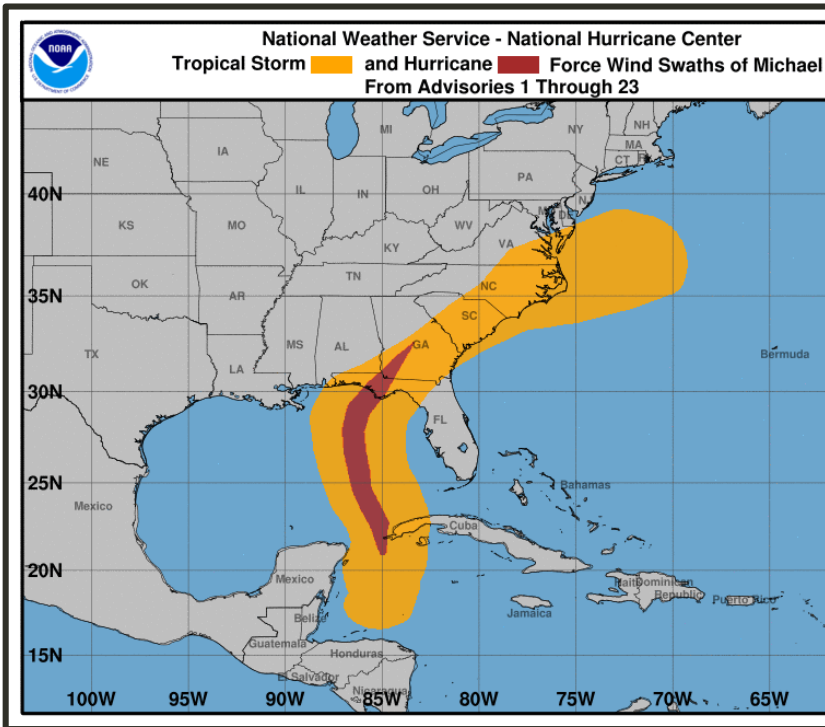
INSURER  
REVIEWS  
CLAIM

ADJUSTER  
VALIDATES

PAYMENT BASED  
ON ASSESSMENT

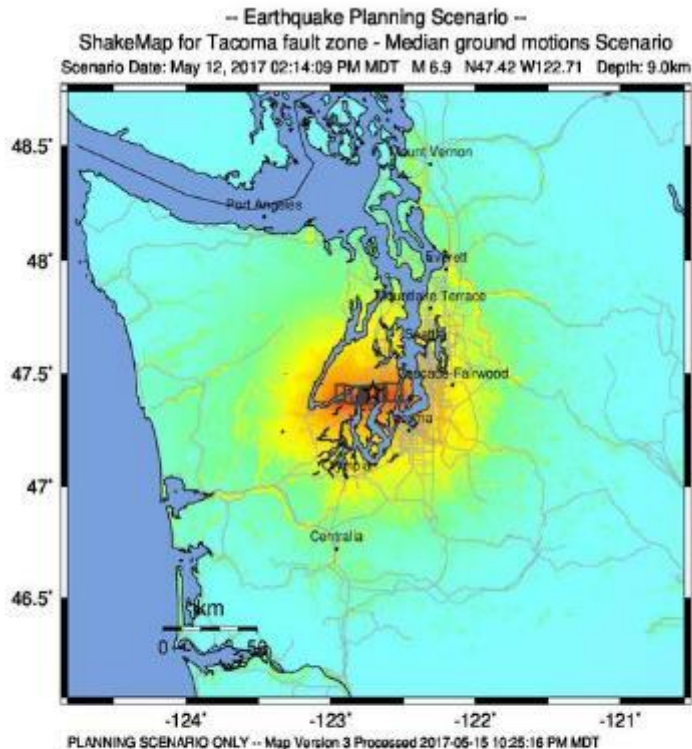
# PARAMETRICS

## PERIL-SPECIFIC VS. PERIL-AGNOSTIC



# SEATTLE CASE STUDY

## PORT OF SEATTLE: MANAGING SEISMIC RISK



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./heavy	Heavy	Very Heavy
PEAK ACC (%g)	<0.05	0.3	2.8	6.2	12	22	40	75	>130
PEAK VEL (cm/s)	<0.02	0.1	1.4	4.7	9.6	20	41	86	>178
INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X

Scale based upon Walden et al. (2010)

- Port of Seattle is considering parametric earthquake insurance to manage the vast potential financial impacts of an event.
- A multi-year structure with guaranteed rates triggered based upon ground shake intensity at their various critical locations.
- This solution would help alleviate pressure from operational disruptions and associated lost revenue as well as protect their bond rating.

(Source: Swiss Re proposal)



# PERIL-AGNOSTIC

## REVENUE PROTECTION FROM UNINSURED EVENTS



### Tourism and Hospitality

Tourism dependent economies and businesses experience revenue volatility from various shock and stress events.



### Toll Roads

Enterprise Fund-based assets are dependent on a single source of revenue and may be disrupted by events outside of their control.



### Airports

Transportation assets, such as airports and seaports, can lose substantial revenue from events that had no direct impact on operations.

**Entities that are overly dependent on single sources of revenue are exposed to shortfalls from a variety of fortuitous events that are not insured.**

# POSSIBLE METRICS

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## VARIOUS TRIGGER APPROACHES

- Peril-specific:
  - Hurricane windspeed/central pressure
  - Earthquake magnitude/ground shake intensity
  - Flood Height/amount of rainfall
  - Heat Days/Cold Days
  - Snowfall height
- Peril-agnostic:
  - Air Passenger enplanements/deplanements
  - Drop in hospitality indicators (RevPAR)
  - Cargo metric Tonnes/TEUs for port operations

# CONSIDERATIONS

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## THE ROAD AHEAD

- (Re)insurance markets have growing appetite for parametric solutions as they reduce adverse selection and are less correlated to their traditional portfolios
- Alternative capital providers are attracted to the diversifying value

**Could the ACI Risk Management Committee sponsor a program to consolidate uncorrelated risks (i.e. hurricane and earthquake) under a single structure to provide efficient capital to its members?**

# QUESTIONS ?