



AEC Industry Experiences from COVID-19:

What We Did | What We Are
Doing | What We Will Do

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Commitment to Safety

Strive for zero incidents





How we are getting
through it?

SMART working is standard

- **We adopted cloud technology more than five years ago** including Microsoft Office 365, Azure, SharePoint, Skype, and Teams
- Our business transitioned seamlessly to a remote working environment on March 15
- Well being, cybersecurity, connectivity, and remote working standards and guidance are continually monitored and updated



Bluebeam Studio Sessions – Collaborative Document Review

As a global firm of 16,000 staff, remote and agile working has always been critical to our success, and we use the latest collaborative software

Markups List

Subject	Page Label	Author	Comments	Status	Date	Color
Line	Revit Sheets 1	CZ			6/29/2020 11:23:40 AM	
Clouds	Revit Sheets 1	CZ	ADD ISOLATION VALVE AND PRESSURE GAUGE	Completed set by Andres Otero on 7/1/2020 at 11:45:12 AM	6/29/2020 11:45:44 AM	
Text Box	Revit Sheets 1	Mark Tompeck	Put the isolation valve here only if the pipe size can be reduced to 8"		7/2/2020 7:22:22 PM	
Text Box	Revit Sheets 1	Mark Tompeck	Can we do what you are suggesting without impacting the piping valve tree?		7/2/2020 7:26:55 PM	
Text Box	Revit Sheets 1	Mark Tompeck	Put the injection point on the straight length of pipe instead of a fitting		7/2/2020 7:38:23 PM	
Text Box	Revit Sheets 1	Mark Tompeck	Will that impact hydraulics/flow split?		7/2/2020 7:39:19 PM	
Text Box	Revit Sheets 1	Mark Tompeck	While I realize that it wouldn't be oriented the same as the Site/Civil		7/2/2020 7:42:42 PM	

Remote working has long term benefits...

Can **improve work/life** balance and provide motivation

Flexibility in **timing** of work is valuable to staff... but boundaries are important

Remote meeting software has resulted in more inclusive meetings and will reduce travel cost

Remote training continues to be very effective (i.e., Learning Point, etc.)

Lower carbon footprint

Reduction in office space and overhead cost

Collaborative tools have helped increase the quality of on-line deliverables

...but has several long term challenges...

The office environment is critical to maintain corporate culture – especially for new staff

Strong leaders are necessary for remote working but can be difficult to find

Wellbeing focus essential – staff can become disenfranchised quickly

Personal social interaction and teambuilding is limited when compared to the office environment

Trust is developed much more effectively working face to face

Remote working is not appropriate for all staff – due to role or home workspace

Cybersecurity and remote connectivity

Current 85% staff to workspace ratio could potentially reduce to 50% post-COVID – a Hybrid approach



Embracing meetings online by default – communication is key

MS Teams benefits

Online meetings are now common place, effective **internally and with clients**

Reduces overhead cost, travel time, and carbon footprint

Video component has significantly improved quality of meetings

Accessibility improves experiences and exposure for junior staff with senior staff

Improves quality of communications with 'out of sight', remote, and dispersed teams

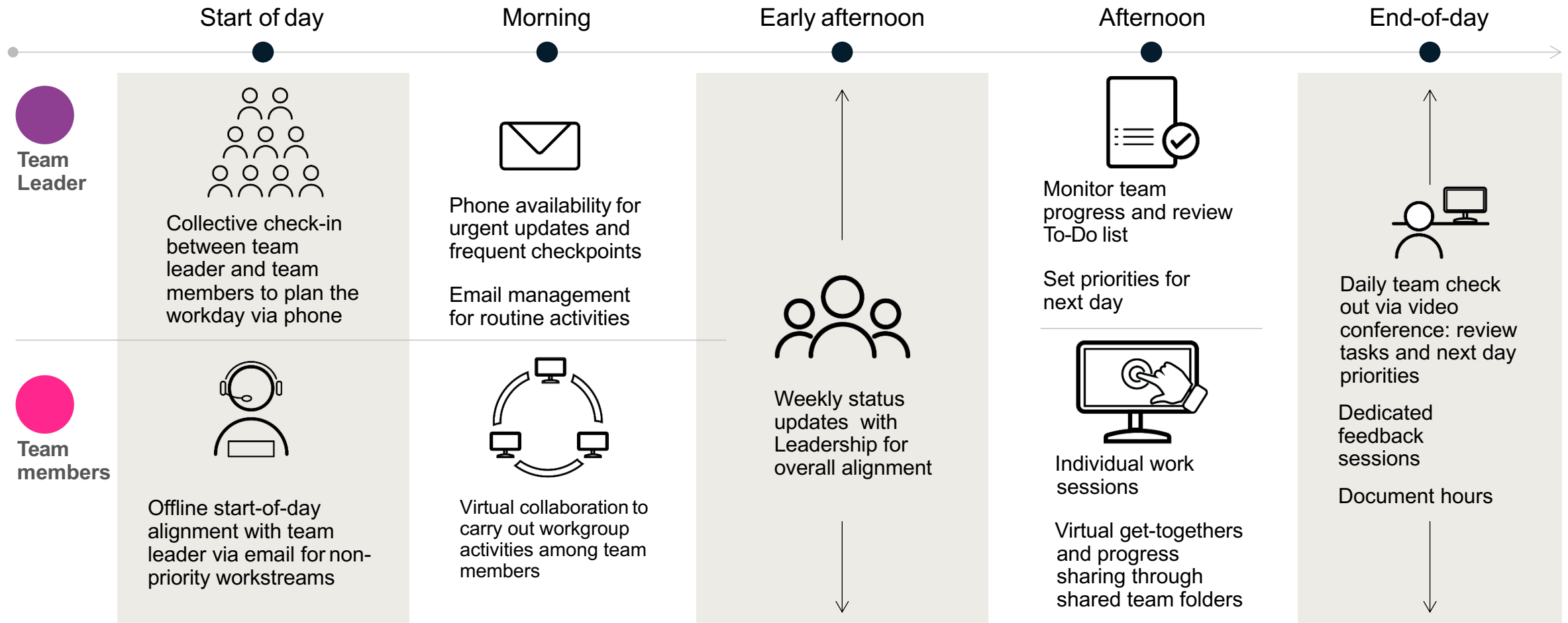
Business critical training can be rolled out more regularly

Staff better aware of global and local best practice (e.g., Town Halls)

Next steps

Review industry best practice for tools and approaches, including balance of in-person vs. online

Maximizing the benefits of remote collaboration



Source – McKinsey & Company – Agile best practices for distributed & work-from-home teams

Our leaders play an essential role in setting direction, energizing, and connecting the dots for remote teams

Setting direction

- **Clear directions:** Leaders need to set clear direction for remote teams to pursue common goals
- **Frequent check-ins:** Increase the level of communication and goal setting and have weekly or even daily check-ins

Energize the team

- **Psychological safety:** Lead by example of the company's actions and increase open communication with employees
- **Delegate decision making power:** Empower employees by involving them in decision making
- **Intrinsic motivation:** In addition to traditional extrinsic rewards and incentives, use intrinsic motivation, such as streamline workflow, clear R&R, clear span of control, and meaningful tasks to motivate employees
- **Replicate normal team setting:** e.g., turn on all team member's webcam

Connecting the dots

- **Proactive problem solving:** engage with remote team frequently to understand roadblocks and progress, proactively offer assistance and be in problem-solving mode to provide value
- **Mobilize resources:** Gather existing resources and have an overview of all progresses and interdependencies of each workstream, connect teams together to solve problems together

Source – McKinsey & Company – Agile best practices for distributed & work-from-home teams

We had to make tough decisions and take aggressive action



Client engagement via daily contact, online comms, and social media

Use of traditional and online platforms and digital content enabled us to rapidly engage with clients and improve our visibility

Account leaders continually reaching out to clients

Sharing information with clients constantly online for digestible “nuggets” of best practice and innovative solutions

Online webinars and panel discussions are cost effective for developing corporate and personal brand

Amping up social media campaigns to support initiatives and capture of major pursuits

How we are
helping **CLIENTS**

Monitoring on-site
construction and field
work for essential projects



Finding new uses for existing tools – MMFit to gather data associated with lead service line replacement program

11:26 Wed Apr 10 SUEZ Service Replacement Construction Report

Was the existing service line exposed?
**Required to submit completed report*
Answering this question will display additional required questions
Excavated at tap and curbstop

Existing SUEZ service line depth (ft) *
4.3

Existing SUEZ service diameter (in) *
3/4 inch

Existing SUEZ service material *
Lead

SUEZ service material observation method *
☒ Visual ☐ Test Kit ☐ Other (Add Note)

Was the gooseneck observed? *
☐ Observed - Lead ☐ Observed - Not Lead ☒ Not Observed

Notes regarding SUEZ service line observations

Was a manifold type service observed? *
☐ Yes ☒ No

Was the existing customer service line observed?
**Required to submit completed report*
Answering this question will display additional required questions
☒ Yes ☐ No



Finding innovative ways to move forward

Traditional on-site activities reinvented overnight



Denver Water, Virtual Public Meeting

- Shifted public outreach to an on-line Zoom broadcast
- Over 800 people participated to learn about the lead service line replacement program



Colombia Toll Road SA, Lenders Technical Advisor

- Found new ways to target and improve our collection of data and information using digital methods
- This complex project would normally require a site visit of four to five intense days
- Held 19 virtual meetings in one week, covering 14 topics

Infrastructure epidemiology

Fundamentally, we need to reduce exposure risk for COVID-19 and other infectious diseases:

- Underlying transmission rates in travel
- Touchpoints - handles, buttons, surfaces
- Time spent in “hazard” areas/pinch-points
- Degree of social mixing/person-density
- Ventilation
- Hygiene and sanitation



STEPS software (Simulation of Transient Evacuation and Pedestrian movementS) is being utilized to create pedestrian models to improve social distancing

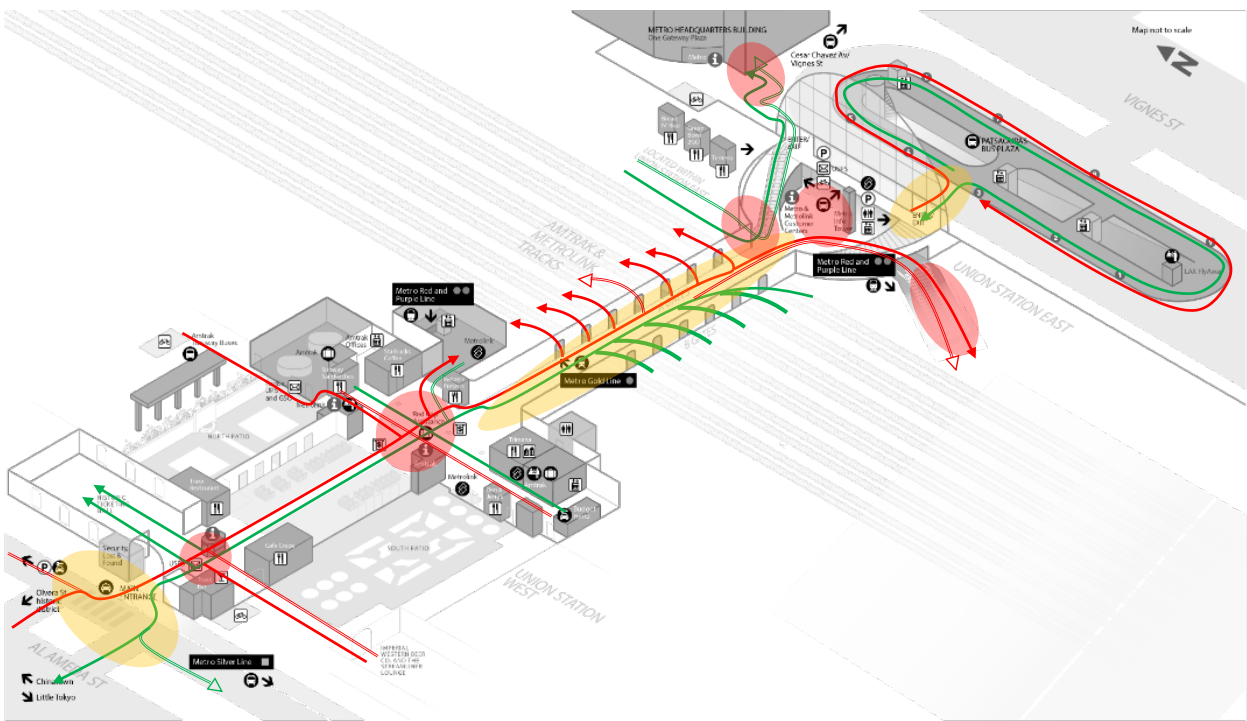
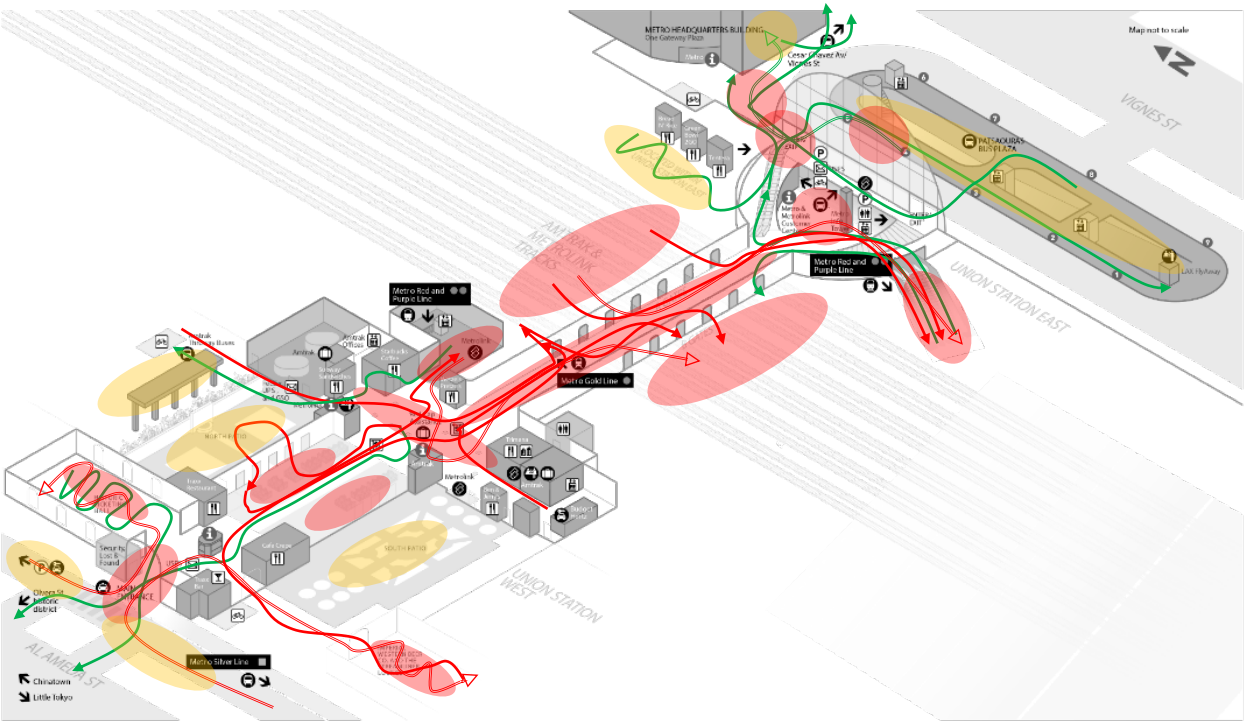
Rail stations

Business as Usual

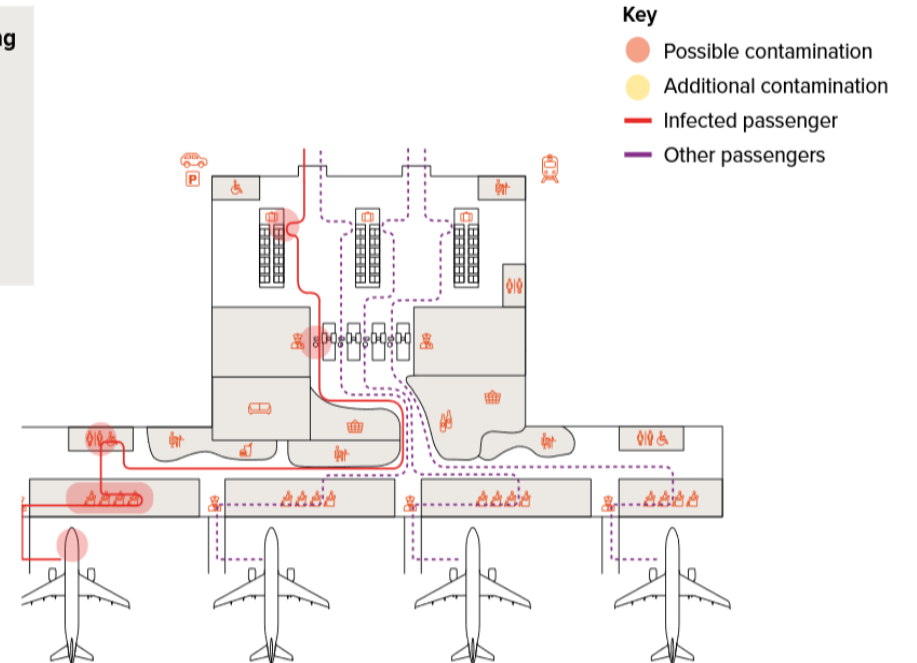
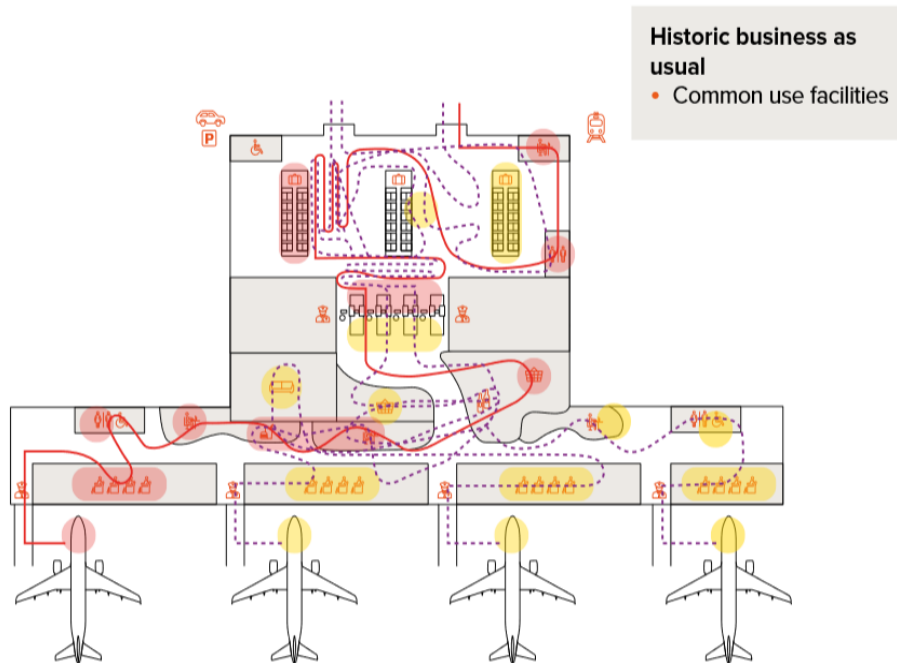
- Common use facilities
- Multiple directions of travel
- Multiple entrances and exits
- Overlapping services

Reduced Risk

- Dedicated facilities
- Guided direction of travel
- Mark areas as either just exits or just entrance
- Limit places to gather
- Keep ticket concourse closed
- Limit number of guests at sit-down restaurants
- Remove dining tables near Subway/Starbucks
- Restrict access to patio areas

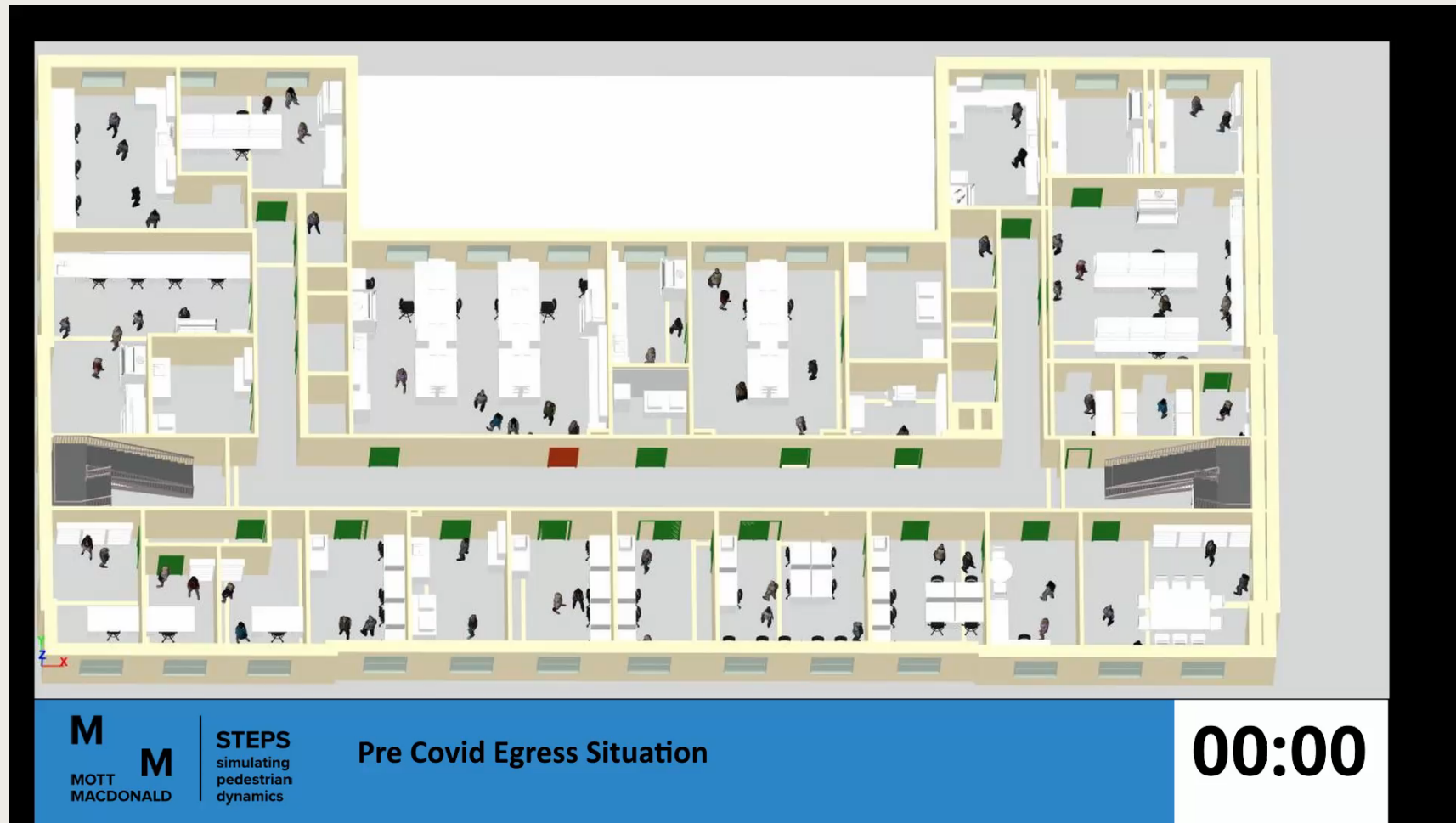


Airports



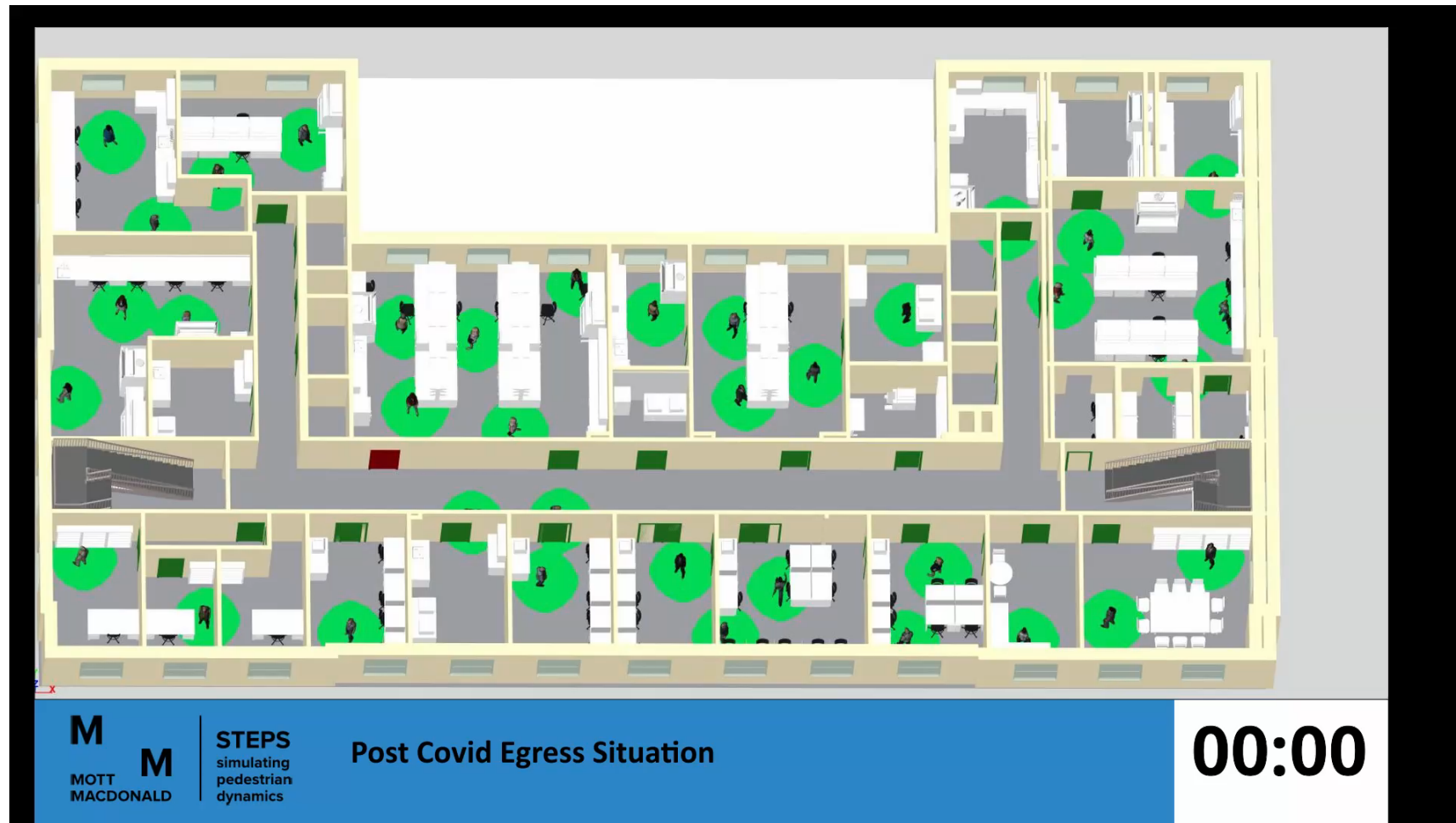
STEPS Modeling and Social Distancing

Rutgers Lipman Hall (laboratory building) (pre-COVID-19)



STEPS Modeling and Social Distancing

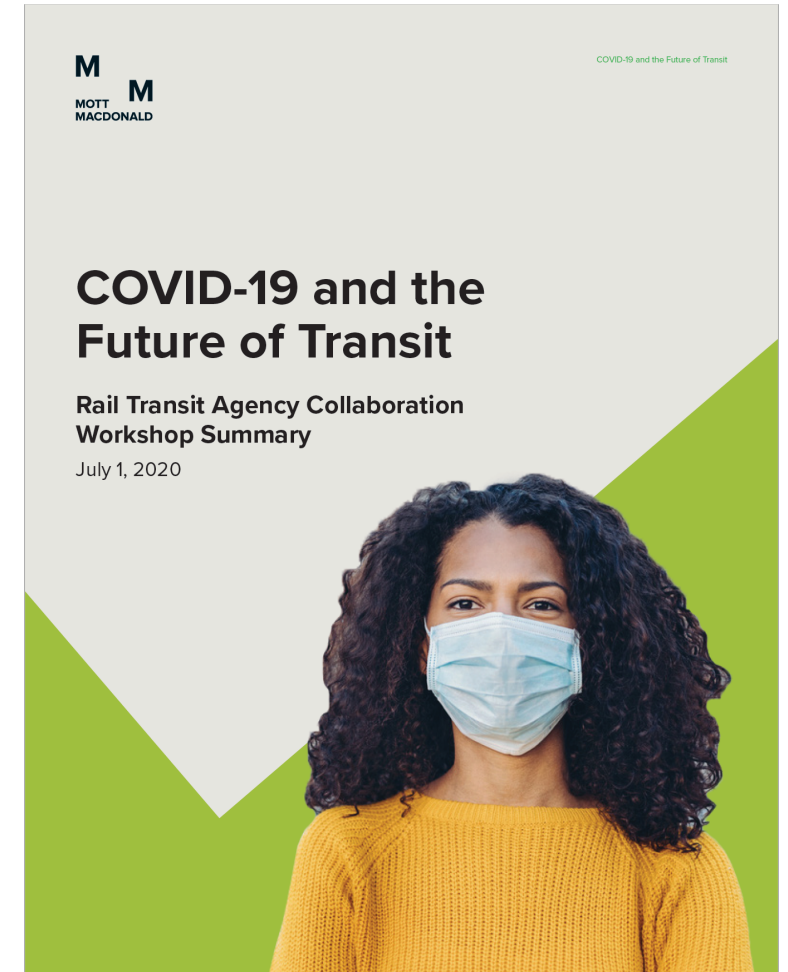
Rutgers Lipman Hall (laboratory building) (post-COVID-19)



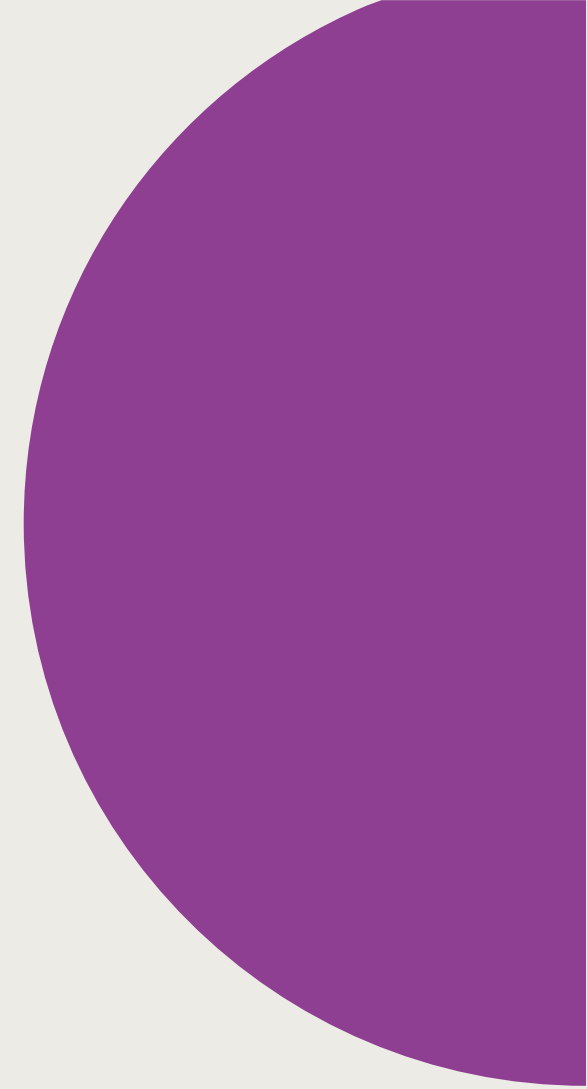
Facilitating multi-agency coordination and communication

Thought leadership – a global collaborative knowledge sharing approach

- Consistency of regional approach
- Communicating schedules
- Accessibility of information
- Public outreach and messaging
- Clarity of integrated signage and way-finding
- Created a global industrial board to share knowledge



Getting back
to **NORMAL**



Red – Amber – Green

Red

Remote working

Everyone except essential operations staff and field staff encouraged to safely work from locations remote from our offices.

Amber

Managed return to our offices

Our offices are open with restrictions such as:

- Daily self-certification
- Behavior and distancing rules
- PPE requirements such as face coverings when in common areas
- Possible restrictions on numbers in the office in order to comply with social distancing and resulting capacity limitations
- An increased focus on hygiene

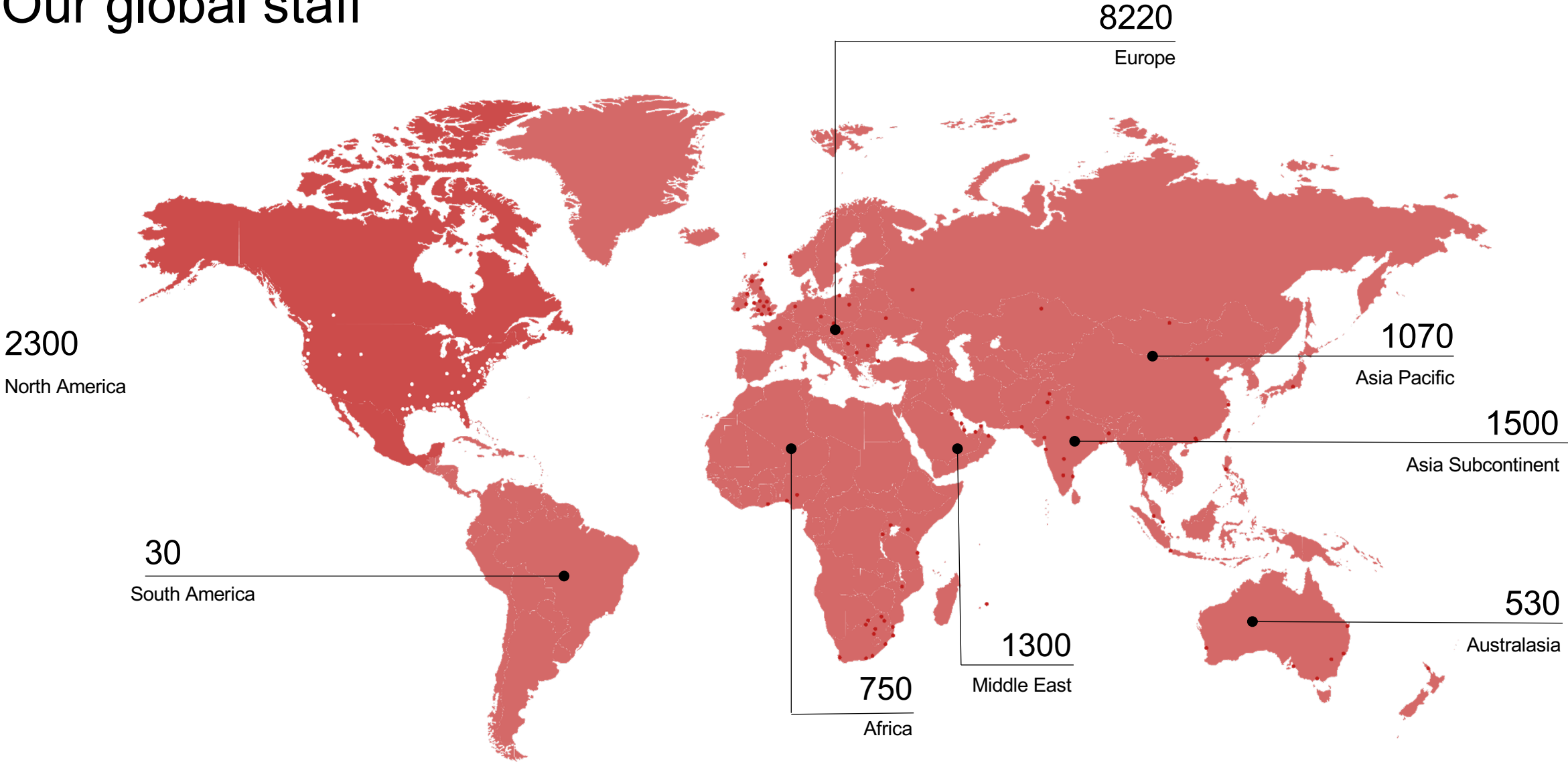
Green

The new normal

Our offices are open with fewer restrictions such as:

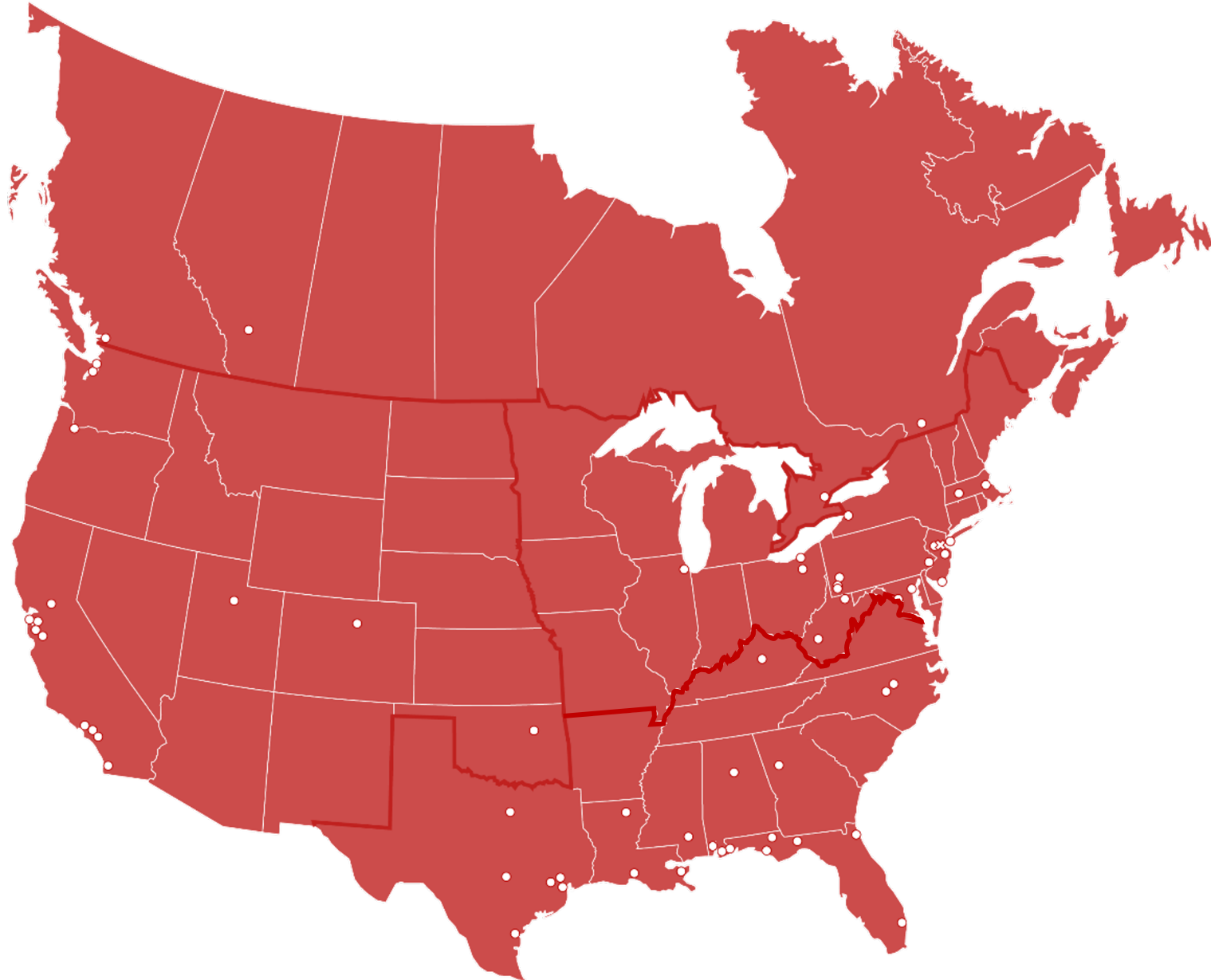
- Self-monitoring for COVID-19 related symptoms
- Reduced restrictions on distancing and PPE
- Continued focus on hygiene

Our global staff



NASA geographic units and offices

2300 total staff
66 offices



Long term benefits resulting from the pandemic...

1

SMART, agile working, and lower carbon footprint -
Meetings online by default

2

Greater emphasis and focus on deploying innovative technology and promoting quality designs and solutions

3

Heightened communication with staff and clients

4

Enhanced client engagement via webinars, online comms, and social media

5

Finding better and innovative ways of supporting our clients

6

Infrastructure epidemiology may become a best practice – a greater focus on health and safety



Thank you

