

Hc_mcg'HfUi a dUf_'&\$&*.'Ni _i bZh'XYf BUWX\U`h][_Y]h'Ua '< UZYb'

9bhXYW_Yb`G]Yžk]Y`XYf`Hc_mc`8fYUa`DUf_`&\$&*`]bbcjUh]jY HYWXbc`c[]Yb`ibX`bUWX\U`h][Y`@Ògib[Yb`a]h'ifVUbYa 9bhYfhU]baYbh'jYfV]bXYh"



Hc_mc '6 Umž' *Jud Ub '! '9]bY 'Ui ZfY[YbXY 'bYi Y 'Ÿ fU'XYf'i fVUbYb 9bhk]W_`i b['ghY\h'VYj cf. '8 Yf'Hc_mc '8 fYUa 'DUf_ž'YfXUW\h'j cb 'HJ 5gU\]ž'k]fX']a 'J\\f'&\$&*']a 'Hc_mc '6 Um!; YV]Yh'YfÒZZbYh"'8]YgYf]bbcj Uh]j Y'DUf_']gh'b]W\h'bi f'Y]b 'gW\ÒbYf'5bV`]W_ž'gcbXYfb'\Uh Y\f[Y]n][Y'D`ÀbYž'HYW\bc`c[]Yž'A YX]Yb'i bX'I a k Y`hVYk i gghgY]b a]hY]bUbXYf'ni 'j Yfk YVYb"'J cf'U``Ya ']bbYf\U`V'XYg'Hc_mc'6Um YG; 'Dfc'Y_hg'k]fX'XYf'DUf_'Y]b'k YgYbh`]W\Yg'9`Ya Ybh'ZØf bUW\\U`h][Y'GhUXh[YghU`hi b['i bX'?`]a UgW\i hn'gY]b"'8 Ug'VYf]W\hYh Ui W\'U]bj Ygh"Wca"

8 Ug' < Ui dhUi [Yba Yf_'XYg'Hc_mc'8fYUa 'DUf_'`]Y[h'Ui Z'Y]bYf J]Y`nU\`'j cb'BUW\\U`h][_Y]hgn]Y`Yb"'8 Uni '[Y\Òfh'X]Y'Bi hni b['j cb %\$\$i 'YfbYi YfVUfYf'9bYf[]Y'V]q'&\$&) 'i bX'X]Y'FYXi _h]cb'j cb $\label{thm:local-state-of-st$

9]b``Ub[Zf]gh][Yg`9b[U[Ya Ybh`ZØf BUW\\U`h][_Y]h

8 UgʻDfc'Y_hʻk]fX'UʻgʻʻYVYbXYgʻ@UVcfʻVYhfUWkhYhži a
I bhYfbY\a Ybʻi bXʻGhUfhi dgʻX]YʻA Ò[ʻ]Wk_Y]hʻni ʻV]YhYbžʻ@Ògi b[Yb]bʻY]bYfʻa cXYfbYbʻGhUXhi a [YVi b[ˈni ˈhYghYb"'+bbcj Uh]j Y
HYWkbcʻc[]Ybʻk]YʻZ]Y[YbXYʻ5i hcgʻi bXʻ?+[YghYi YfhYʻ]bhYʻ`][YbhYBYhnYʻg]bXʻHY]``XYfʻDʻUbi b["'5i WkʻGa UfhʻK UhYf!@Ògi b[Ybʻi bXXYfʻ:c_i gʻUi Zi fVUbYfʻA cV]`]hÀhʻa]hʻYʻY_hf]gWkYbʻ: U\fnYi [Ybk YfXYbʻ]bʻ6YhfUWkhʻ[Ync[Yb"

8 Y F c Y XY f B Y k T f V U b 5 [Y b X U

: Øf'Y]bY'bUW\\U`h][Y'GhUXhYbhk]W_`i b[']gh'Ui W\'X]Y'BYk'I fVUb
5[YbXU'j cb'[fc» Yf'6YXYi hi b["'8]YgY'gW\`À[h'j cfž'ghÀXh]gW\Y
FÀi a Y'_ca dU_h'ni '[YghU`hYb'i bX'ÒZZYbh`]W\Yb'JYf_Y\f'ni
ghÀf_Yb"'G]Y'k]fX'j cb'j]Y`Yb'GhÀXhYb'U`g'F]W\hgW\bi f'[Ybi hnhž'i a
XYb'<YfUi gZcfXYfi b[Yb'XYf'I fVUb]g]Yfi b['Ybh[Y[Ybni k]f_Yb"
8]Y'5[YbXU']gh'b]W\h'bi f'Y]bY'GUa a `i b['j cb'≠XYYbž'gcbXYfb

V]YhYh'_cb_fYhY'5bgÀhnY'ZØf'?ca a i bYbž'i a 'X]Y'I B!
BUWX\U`h][_Y]hgn]Y`Y'ni 'YffY]WXYbž'VYgcbXYfg']b'6Yni ['Ui Z
]b_`i g]j Y'i bX'fYg]`]YbhYf'GhÀXhY"'8Ug']gh'VYgcbXYfg'k]WXh][ži a
X]Y'N]Y`Y'XYf'I a k Y`hVi bXYgUa h'ni i bhYfghØhnYb"

CVk c\``HJ '5gU\]']b'XYf'J Yf[Ub[Yb\Y]h'a]h'< YfUi gZcfXYfi b[Yb_cb Zfcbh]Yfh'k Ufž'_ObbhY'X]Y'9fOZZbi b['XYg'Hc_mc'8fYUa 'DUf_Y]bYb'K YbXYdi b_h'XUfghY``Yb"'8Yf'DUf_'_ObbhY'U`g'?UhU`mgUhcf ZØf'a cXYfbYg'9bhYfhU]ba Ybh'i bX'U`g'UhhfU_h]j Yg'NYbhfi a 'ZØf HYW\\\bc`c[]Y]bbcj Uh]cbYb'Zi b[]YfYb"'DUfhbYfgW\\UZhYb'a]h GhUfhi dg']b'XYb'6YfY]W\\Yb'5F#JF\\z'?\\Z\\bgh\\)bhY``][YbhY'\\\\z\\Th\\Yb'\YfY]hg']b'XYb'GhUfh`OW\\Yfb"

8]Y'F]g]_Ybž'X]Y'a]h'XYa'Dfc'Y_h'j YfVi bXYb'g]bXž'k]Y
6Ui j YfnÒ[Yfi b[Yb'cXYf'b]YXf][YfY'6Ygi WXYfnU\'Ybž'g]bX
dfÀgYbhž'UVYf'XYf': c_i g'Ui Z'bUWX\U`h][Y'\DZfUghfi _hi f'i bX
]bbcj Uh]j Y'A YX]YbhYWXbc`c[]Yb'gdf]WXh'ZØf'Y]b'[i hYg'; YgWXÀZh''
8Yf'ei]W_`YVYbX][Y'5i ghUi gWX'i bX'X]Y'Yb[Y'Ni gUa a YbUfVY]h
i bhYfgWX]YX`]WXYf'5_hYi fY'Ui g'XYf'\DXi ghf]Y'`UggYb'X]Y'<cZZbi b[
Ui ZV`Ø\Ybž'XUgg'Hc_mc'6Um'VU`X'Y]b'[`cVU`Yg'5i g\Àb[YgWX]`X'ZØf
[fØbY'HYWXbc`c[]Y'i bX'i fVUbYb'@YVYbggh]``gY]b'k]fX''

8 YhU]`g	
Cfh	Hc_mc^6Umž'*JJdUb
EiY``Yb	• k k k "U]bj Ygh"Wca
	• k k k "hfi ghY X!]b W'Wca
	• k k k "i a k Y`hVi bXYgUa h"XY

6Ygi WXYb G]Y i bg Ui Z. k ca , + "XY