

https://dspace.org/

Clinical evaluation useability and utility of the Work Ability Screening Profile II WASP II

Denise Franzsen; Thavanise Gurayah; Kerry Magill; Patricia De Witt

https://hdl.handle.net/10539/48535
SCIELO SA

Downloaded from a DSpace repository. https://dspace.org/

RESEARCH ARTICLE

Clinical evaluation, useability, and utility of the Work Ability Screening Profile II (WASP II)

AUTHORS

Denise Franzsen[a]
http://orcid.org/0000-0001-8295-6329
Thavanesi Gurayah[b]
https://orcid.org/0000-0001-9005-6355
Kerry Magill[b]
https://orcid.org/0000-0001-9160-5483
Patricia de Witt[a]
https://orcid.org/0000-0003-3612-0920

AFFILIATION

[a]Occupational Therapy, School of Therapeutic Sciences, Faculty of Health Sciences, University of the Witwatersrand, South Africa
[b]Occupational Therapy, School of Health Sciences, University of KwaZulu Natal, South Africa

CORRESPONDING AUTHOR

Denise Franzsen
Email: denise.franzsen@wits.ac.za

KEYWORDS

generic work skills, standard scores for ability (productivity), South African work context, screening assessment tool

HOW TO CITE THIS ARTICLE

Franzsen D, Gurayah T, Magill K, de Witt PA. *Clinical evaluation, useability and utility of the Work Ability Screening Profile II (WASP II)*. South African Journal of Occupational Therapy. Vol 54 No 1 April 2024. DOI: https://doi.org/10.17159/2310-3833/2024/vol54no1a2

ARTICLE HISTORY

Submitted: 28 April 2023
Reviewed: 11 October 2023
Revised: 27 October 2023
Accepted: 29 October 2023

EDITOR

Hester M. van Biljon
https://orcid.org/0000-0003-4433-6457

DATA AVAILABILITY

Data available on request from the corresponding author

FUNDING

No funding was received for the research.

Published under an International Creative Common LIsence 4.0

ISSN On-line 2310-3833

ABSTRACT

Introduction: The Work Ability Screening Profile (WASP) was conceptualised and developed by occupational therapists at the University of Durban Westville to provide a basic vocational screening assessment. Its purpose was to screen competence in generic work skills which reflected performance in activities essential to workplace participation relevant to the South African context. The assessment was revised in 2005 and renamed the WASP II. It was decided this screening assessment tool would be continuously reviewed using action research with clinicians involved in the ongoing evaluation so ensure validity and reliability for the population with which it is used. This study considered the clinical evaluation, useability and utility of the WASP II in order to inform further revision.
Method: A cross sectional survey was used to gather data from 70 occupational therapy clinicians familiar with or using the WASP II in clinical practice.
Results: A sample of 70 respondents indicated the WASP II was suitable to assess current work ability and production speed with a variety of clients with physical and mental health dysfunction. Ten of the 12 subtests were used by at least 40% of the time by the 28 respondents who used the WASP II frequently. These respondents reported good to adequate useability in terms of cost, sensitivity to clients' educational level and ease of understanding instructions, incorporation into clinical practice contexts while supporting clinical reasoning and judgement. The accommodation of clients' language and provision of standard scores were indicated as inadequate. Utility was considered adequate for all aspects including discrimination of moderate to severe dysfunction, informing the choice of other assessmentsas well as supporting vocational rehabilitation intervention. The WASP II outcomes were also understood by other service providers, employers, referring parties as well asclients.
Conclusion: While the WASP II was considered appropriate for use in the South African context and has adequate useability and utility, some subtests need to be updated and revised in terms of the standard times and content validity for current practice in the work environment.

Implications for practice

The WASP II has useability

- aligned with generic work skills of acquiring information or following directions numeracy, conveying information and written communication
- for with those with work experience and with scholars and students yet to enter the workplace

The WASP II has utility in relation to

- cost and clients' educational levels
- detailed instructions on the task layout but some standardisation needs to be interpreted with care
- sensitivity to all aspects of assessment of generic work skills, except discrimination of mild dysfunction

INTRODUCTION

Vocational rehabilitation has been included in the Compensation for Occupational Injuries and Diseases Amendment Bill in 2020[1] and makes provision for funding for these multidisciplinary services for workers injured on duty by the Department of Employment and Labour in South Africa. These services may be offered by occupational therapists[2], to a diverse client base due to multicultural, educational, political and socio-economic diversity within the country.

It is essential that a work assessment for dysfunction related to work, or to prevent work dysfunction from occurring is customised for each individual, be it preparing for the worker role, returning to work, or being considered for an alternate work role. This is due to the individual nature of clients, their work capacity and work interests, experiences and capacities and illness/disability limitations related to various job demands[3]. Relevant general or basic work skills or prevocational skills need to be screened to gain an initial indication of the individual's work abilities to assist in the selection of appropriate vocational assessments to evaluate specific work skills[4]. In South Africa, this presents challenges for assessing generic work skills due to a lack of locally standardised work assessments.

The need for a basic vocational screening assessment to screen generic work skill competencies reflecting performance in activities essential to workplace participation[5] relevant for the South African context was expressed by occupational therapists in KwaZulu Natal as far back as 1995[5]. The high cost of available work assessment screening instruments (most of which had been standardised in the global north), could not be justified in the light of other health and rehabilitation needs[6]. In addition, the imported tests were not found to be culturally or language-impartial for the local population served[7]. Clinicians believed that rather than just observing general activity participation as a screening for work ability, they required a more contextually relevant, valid and reliable screening tool with evidence-informed scores[6]. This was essential to substantiate findings in reports and criteria to support more comprehensive assessment[8].

Led by Sue Barnard, a team of lecturers and students from the University of Durban Westville (now University of Kwa-Zulu Natal (UKZN), clinicians from KwaZulu Natal's public sector occupational therapy departments treating patients with psychiatric, neurological, and physical dysfunction, as well as occupational therapists in private practice considered experts in the field of vocational rehabilitation, collectively developed a series of job samples in subtests. These subtests considered components necessary for work ability screening. Approximately three weeks was spent constructing a series of job samples which included basic work tasks typical within the South African work context[8],which collectively became the prototype named the Work Ability Screening Profile (WASP I)[8].

General work requirements including memory, concentration, decision making, judgement, organising and planning, motor abilities, co-ordination, dexterity, following of instructions and dynamic postures (which were later reflected in the 'activities' component of the International Classification of Functioning, Disability and Health (ICF)[9], were determined for each of the tasks included in the WASP I screening battery. Tasks to evaluate some psychosocial components such as client perceptions of stress, time management and issues in their work situations were also included in the battery[8].

Scores for both ability (competence) and speed (productivity) were compiled. Lack of ability was judged on the number of errors made during the task execution. Speed was measured using Modular Arrangement of Predetermined Time Standards (MODAPTS)[10] which allows for the comparison of a clients' performance against the time taken by an average competent worker completing the screening assessment tasks. Detailed information on the structuring of each screening assessment task was provided so as to conform to the speed standards provided[8]. All subtests were designed to be standalone, and therapists could choose to administer subtests that suited the client's needs. Moreover, the screening provided a baseline for further in-depth testing and designing of vocational rehabilitation intervention programmes[8]. The reliability and validity of the WASP I was not researched. The occupational therapists used their clinical skills and experience to interpret test performance[6].

The WASP I was revised and published as the WASP II in 2005. Decisions regarding the revisions were based on the clinical experience of using the WASP I by a team of three experienced occupational therapists working in vocational rehabilitation and academia. Changes that were made included adding and removing tasks in the subtests, changing times and scoring in some job samples[8]. In the WASP II, it was made clear that not all subtests were timed, and these subtests reflected ability scores alone. There were plans to develop more specific tasks for particular occupations to add to the WASP II but these plans were not followed up so only the 12 job samples which screen basic work skills were retained[8]. To facilitate the ongoing development of the screening assessment it was decided the WASP II would be continuously reviewed using action research with clinicians involved in the ongoing evaluation and revision of the screening assessment. This process was anticipated to allow the occupational therapist to screen for capability consistent with criteria based on standards and competence measured using accuracy appropriate to the South African employment context[8]. The purpose of this action research was to evaluate the appropriateness of the screening instrument in terms of theoretical and empirical evidence of validity, reliability, and compatibility with local service delivery, needs and population fit[11].

The WASP I and WASP II have been produced and sold by the University of KwaZulu Natal since 1995 and 2005 respectively[8]. Although many kits were purchased, the assessment has not been systematically evaluated and the useability and clinical utility of the WASP II to screen clients in current occupational therapy practice in South Africa has not been determined.

©SA Journal of Occupational Therapy

09, 7(9: 7, 7, ; 0, <
W< GLIGFJ< F=8EP J: I<<E@> 98^<IP @KF @<EK@P K?FJ< 8K
I@B F=GFFI G<I=FID 8E: < @ M8I@LJ ; FD 8@J I<C8K<; KF NFIB
8E; G8IK@@8K@E ; @<I<E: <J 8D FE>JK I<=<II<; : C@EKJ KF
; <K<ID @< @8 ; <K8@<; MF: 8K@E8C<M8C.8K@E @I<HL@<; LJ@>
8GGIFGI@K< I<C@9C< 8E; M8C@ JK8E; 8I; @<; K<JKJ
W< <M8C.8K@E F=8 J: I<<E@> 8JJ<JJD <EKJL: ? 8J K?< 1 -*
#@: FEK@><EKFE K?< GLIGFJ< =FI N?@? @@LJ<; W< 1 -*
#8KGI<J<EK@LJ<; : C@@8CP 8J 8 ; @>EFJK@KFF0c KF <M8C.8K<
K?< E8KLI< 8E; <OK<EKF=8 : C@EKJ ; <Z: @J @><E<I@NFIBJB@J
FI GI<MF: 8K@E8C JB@J 98J<; FE K?<@ C<M<C F= <; L: 8K@E
W< 8JJ<JJD <EK8CJF ?8J K?< GFK<EK@CKF 9< LJ<; 8J 8 NFIB
I<8; @<JJ 8JJ<JJD <EKbd KF ; <K<ID @< N?8KGI<MF: 8K@E8CJB@J
?8M< 9<<E : FEJFC@8K<; 8E; N?@? E<<; KF 9< =LIK?<I
; <M<CFG<; =FI <O8D GC< N@? 8; FC<J: <EKJ N?F 8I< I<HL@<; KF
K8EJ@@E @KF K?< NFIBGC8: <be W<I< 8I< FK?<I JK8E; 8I; @<;
J: I<<E@> 8JJ<JJD <EKJ N?@? <M8C.8K< ><E<I@NFIB JB@J 9LK
; F EFK@ C.; < K?< : FD GFE<EKJ 8JJ<JJ<; 9P K?< 1 -* #. NF
<O8D GC<J 8I< K?< JJ<JJD <EKF=1 FIB *<I=FID 8E: < 1 * bf
8E; 1 FIB 9@@P #E; <O 1 #bg W< 1 * bf @8E 8: K@@P 98J<;
8JJ<JJD <EKF=8 : C@EKJ NFIB 89@@P JB@J N?<E G<I=FID @>
8EP NFIB 8: K@@P @I<8CC@< 8E; FK?<I J<^@>J N?<I< ZE; @>J
8I< I<GFIK<; @ I<C8K@E KF 9F; P JKL: KLI< 8J N<C8J D FKFI
JB@J GIF: <JJ JB@J 8E; : FD D LE@8K@E JB@J WI<< JG<: @
JKL: KLI<; J@ LC8K<; NFIB K8JBJ ?8M< 9<<E 8; ; <; KF K?< 1 *
8E; K?@ JG<: @ 8GG@8K@E @JKLD <EK @ : 8C<; K?<
1 * - bh W< 1 #8CJF J: I<<EJ 8JG<: KJ 8Y<: K@> NFIB 9LK@8
J<G=I<GFIK HL<JK@EE8@< N?@? @ C.; <J FE< J<: K@E FE
D <EK8C: 8G89@@@J =FI NFIBbg
&@<I8KLI< @; @8K<J K?< =FCFN@> >L@<C@<J 9< LJ<; =FI K?<
<M8C.8K@E F=LE@<IJ8CJ: I<<E@> 8JJ<JJD <EKJ W< K8I><K<;
; FD 8@ : FEJKL: KJ 8E; K?< =FID 8K F= K?< J: I<<E@>
8JJ<JJD <EKD LJK 9< : C<8IC P ; <ZE<; C8I@P FE N?<K?<I K?<
J: I<<E@> 8JJ<JJD <EKE<<; J KF 9< LJ<; @ @J <EK@<KP ?FN
@=FID 8K@E N@C 9< F9K8@<; 8J N<C 8J ?FN F\ <E K?<
8JJ<JJD <EK J?FLC 9< 8; D @@K<I<; D LJK 9< ALJK@<; W<
: C@@8C LJ<89@@P 8E; LK@@P F= K?< J: I<<E@> 8JJ<JJD <EK
J?FLC 9< ; <K<ID @<; bb

M<E @8 J: I<<E@> 8JJ<JJD <EK?8J 9<<E J?FNE KF 9< M8C@
8E; I<C@9C< 8JG<: KJ JL: ? 8J =<8J@@@P F=K?< 8; D @@K8K@E
@<EK@ 8K@E FLK FD <J 8E; : FD G8K@@@P N@? CF: 8CJ<IM@<
; <C@<IP E<<; J D LJK 9< <EJLI<; g -D 8IK bi
: FE: <GKL8C@<; : C@@8C LK@@P LE; <I =FLI : FEJKL: KJ =FI
@K<IM<EK@EJ @ K?< NFIBGC8: < 8GGIFGI@K<E<JJ I<C<M8E: <
GI8: K@8C@P 8E; 8: : <JJ@@@P @K<ID J F=: FJK GGIFGI@K<E<JJ
@I<C8K<; KF ?FN <Y<: K@< K?< 8JJ<JJD <EK @8E; ?FN @ZKJ
@KF K?< <O@K@> @K<IM<EK@E GIF: <JJ N?@? @ C.; <J =FID 8C
<M@<E: < =FI K?< LJ< F=K?< 8JJ<JJD <EK , <C<M8E: < I<C8K<J KF
K?< @ G8: K@?8J FE K<8KD <EK8E; : C@@8C, <: @@E D 8B@>
J: I<<E@> 8JJ<JJD <EK J?FLC 9< 89C< KF @<EK@P ; @: LC@J
K?8K8E @; @@L8C: LII<EKCP <OG<I@E: <Jbj 8: IFJJ K?< NFIB@>
8>< 98E; J 8E; N@? 9FK? 8: LK< 8E; : ?IFE@: FE; @@EJ W<
1 -* # ?8J 9<<E LJ<; N@? JL98: LK< 8E; : ?IFE@
D LC@@ @>EFJK@ : C@EKJ =FD P<8IJ KF P<8IJ W<
8JJ<JJD <EK N8J ; <J@E<; KF 8: : FD D F; 8K< G<IJFEJ N@? 8
N@< I8E>< F= <; L: 8K@E8C98: B>IFLE; J 8C?FL>? JFD < AF9
J8D GC<J I<HL@< 8 98J@ C<M<C F= C@<I8: P 8E; EF NFIB
<OG<I@E: < @I<HL@<; W< 1 -* #?8J 9<<E LJ<; KF J: I<<E
: C@EKJ =FI D <; @FC>8C8E; @JLI8E: < : C8@J 8E; I<KLIE KF
NFIB J@L8K@EJ ; ; @@E8CP @?8J 8CJF 9<<E =FLE; KF 9<
JL@89C< =FI J: I<<E@> F=GI<MF: 8K@E8CJB@J =FI J: ?FC8IJ 8E;
=FI AF9 J<<B<IJi
W< GI8: K@8C@P F=K?< J: I<<E@> 8JJ<JJD <EK: FEJ@<IJ K?<
8; D @@K8K@E J<^@> K8@@> I<HL@<; K@< <] : @E: P
J: FI@> : FD GC<O@P 8J N<C8J 8: : <JJ@@@P @I<C8K@E KF K?< : FJK
I<C8K@< KF K?< 9<E<ZKJ F= @<EK@P@> ; PJ=LE: K@Eca W<
1 -* #@8: : <JJ@C< @K<ID J F=K?< : FJKF=8; D @@K8K@E 8E;
: FJK<Y<: K@<E<JJ @ I<LJ@> D 8K<I@Jbi W< JL9K<JKJ D LJK9<
8; D @@K<I<; 9P 8E F: : LG8K@E8C K?<I8G@K 8E; K?<@
GIF=<JJ@E8C BEFNC<; >< 8E; <OG<I@E: < 8I< I<HL@<; =FI
F9J<IM8K@EJ KF JLGGFIK K?< J: FI<J F9K8@<; 8E; @ @K<IGI<K@>
K?< I<JLCKJ *I8: K@8C@P @ K?< 8; D @@K8K@E F=8CAF9 J8D GC<J
@ K?< 1 -* #@ K<ID J F=K?< : FD GC<K<E<JJ F=K?< @JKL: K@EJ
?8M< 9<<E 8; ; I<JJ<; 8E; K?< AF9 J8D GC< C8PFLK @
JK8E; 8I; @<; @<JG<: K@< F=K?< GFJ@@E F=K?< K?<I8G@KJ @
I<C8K@E KF K?< : C@EK; LI@> K<JK@> W< J: FI@> @I<C8K@<CP
J@ GC< J@ < 89@@P 8E; JG<<; 8I< J: FI<; FE 8 GF@KJ: 8C<
N@? 8 I8K@> F= @; @8K@> 89FM< 8M<I8>< G<I=FID 8E: < 8E;
N@? 8 I8K@> F= @; @8K@> J<M<I<CP @ G8@<; G<I=FID 8E: <i

W< LK@@P F=8E 8JJ<JJD <EK ; <K<ID @<J 8: : <GK89@@P KF 8C
JK8B<?FC<IJ @ C.; @> K?< : C@EKJ K?<@ =8D @P K?<
D LC@@ @@8IP K<8D <D GCFP<IJ C>8C<OG<IKJ 8E; @JLI8E: <
: FD G8E@J =FI D <8E@>=LC @ G8: K FE J<IM@< ; <C@<IPbi C
JK8B<?FC<IJ J?FLC 9< 89C< KF LE; <IJK8E; K?< @ GC@8K@EJ
: FEJ<HL<E: <J 8E; FLK FD <J F=K?< J: I<<E@> 8JJ<JJD <EK #E
K?< 1 -* # 8C JL9K<JKJ 8I< GI<J<EK<; @ E>C@? 8E; 8
K8EJC8KFI D 8P 9< LJ<; KF <OGC8@ K?< @JKL: K@EJ @K?< : C@EKJ
ZIJKC8E>L8>< @EFK E>C@? 9LKEF =FID 8CK8EJC8K@E F=K?<J<
@JKL: K@EJ @ 8M8C89C< %EFNC<; >< F= 8GGIFGI@K< =LIK?<I
8JJ<JJD <EKJ @K<IM<EK@EJ 8E; NFIB 8: : FD D F; 8K@EJ E<<; <;
8I< 98J<; FE K?< J: I<<E@> 8I< 8CJF @ GFIK8EK -: I<<E@>
N@?FLK K?< FGGFIKLE@P =FI =LIK?<I D FI< : FD GI<?<EJ@<
8JJ<JJD <EK @K<IM<EK@E GC8EE@> 8E; J<IM@< ; <C@<IP @ 8
N8JK< #K: 8E I<JLCK @ K?< LEE<: <JJ8IP C89<C@> F=: C@EKJ 8J
; @89C<; N?@? D 8P @ G8: K K?<@ 89@@P KF 8: ?@M< =LKLI<
FLK FD <Jbi
, <: FD D <E; 8K@EJ 8J 8 I<JLCKF=K?< J: I<<E@> 8JJ<JJD <EK
J?FLC 9< =<8J@C< 8E; : FEK<OKL8CCP I<C<M8EKca W @ @ C.; <J
K?< <: FCF>@8CM8C@@P F=K?< J: I<<E@> 8JJ<JJD <EK @ I<C8K@E
KF I<8CNFIC K8JBJ 8E; I<8CNFIC =LE: K@E@> @
<D GCFPD <EKbb . F @ GIFM< K?< I<C<M8E: < F=K?< 1 -* # AF9
J8D GC<J N<I< 98J<; FE -FLK? =@8E <; L: 8K@E8CEFID J 8E;
AF9 J8D GC<J N?@? I<[<: K><E<I@89@@@J I<HL@<; @ D 8EP
F: : LG8K@EJ N<I< 8JJ<JJ<; i 1 -* #N8J ; <J@E<; KF J: I<<E
J8D GC< 9<?8M@LIJ @ 8 : FEK<OKFK?<I K?8E K?< NFIBGC8: < W<
: ?F@< F=8; D @@K<I@> FECP JFD < JL9K<JKJ FI K8JBJ I<C<M8EKKF
K?< : C@EK8CCFNJ =FI 8 : C@EK: <EK<; 8GGIF8: ?bi 8E; K?< <Y<: K
F=K<JK@> FE K?< : C@EKJ K?<D J<C<M<J : 8E 9< D FE@FI<; 9P K?<
F: : LG8K@E8C K?<I8G@Kcc W< 1 -* #: 8E 9< 8; D @@K<I<;

KE FE<:(EK=I @8>=IFLG=LGKE ZM:(EK8K8(<W< 1 -* #:8E 8(F 9< 8;D(@K<; 8::=I;@8E<=I<J<8I:?<(Q GM<CF=<E;LI8E<=I<(D GC<8 =<N A59 J8D GCJ8;8P@ :FD D(<< (9(4(2=8(8 :FE<(K(=8:KEJ8J N<(C8J8(CHL<J(EJ FE K<HL<J(EE8@KJ8<K<EJ8@;LJ@>=8(D);<(@ <D F>I8G?(@8E:FE<(K(=8:KEJ8J N<(C8J8(CHL<J(EJ FE K<HL<J(EE8@KJ8<K<EJ8@;LJ@>=8(D);<(@ GA:<E8><J W<FG<E<E;<;HL<J(EJ N<I<8E8D);<(@ JLD D8(K8E8D);@8E;:FD D<EK N<I<(@<EK;8J GFJ(@K FI E<>8(K<JGFEJ<J i "$ #" -<ME@>J<ME I<JGFE;<EK:FD GCK(K;K<HL<J(EE8@K9LK FE(P HL<J(EE8@<J N<I<8E8D);8J J<ME N<I< ;(2(9554 5-9',&" ;JGFE;<EK GFM(@;J<IM@<J KE D FI<K8E FE<KBG< F= ,<JGFE;<EK N<I<8E8CG8:K@<J N@D FI<K8E GFM(@> :(@EK@(K<(@:8E8CG8:K@<J N@D FI<K8E GFM(@> J<IM@<J KE:(@EK N@D CB(@D<EK8E;D FI<K8E J<IM@<J KE:(@EK N@D G?PJ(@8CD<EK8E;D FI<K8E GFM(@> GFJM(@>J<IM@<J KE:(@EK N@D D<EK8C?<8(K ,3 5.7(6/0*85-9',8(362 J J<E#FD.89G#9<(EN K<>I<8KJK ELD9<I F= I<JGFE;<EK N<I<9<(KN<E K<>=J8><E;(@8 F= E<8I(P?8G F=I<JGFE;<EK?8M@>GFJ(K<I8;L8K K8(@>FI GFJ(K<I8;L8K;<>I<<J #()2 ,3 5.7(6/0*85-7,8654+,498

W< 1 -* #N8J LJ<; D FJK=I<HL<EKCP N@K? K?< : C@EKJ
GI<J<EK@> N@K? K8LD 8K@9I8@ @ALI@J 8E; LGG<I C@9
8E; ?8E; @ALI@J FIKP KNF G<I: <EK F=I<JGFE; <EKJ
@, @8K<; K?<P J: I<<E<; : C@EKJ N@K? ; <GI<JJ@E
J: ?@FG?I<E@ 9@FG8I D FF; ; @FI; <I 8E; 8EO@KP LJ@> K?@
J: I<<E@> 8JJ<JJD <EK) K?<I : C@EKJ @ C; <; E<LIFCF>@8C
: FE; @EJ JL: ? 8J JKFB< JG@8C : FI; @ALI@J C8IE@>
; @89@@J 8E; @K<C: KL8C, @89@@J W< 1 -* #N8J =FLE;
KF 9< JL@89C @<JG<: K@K F=K?< ZIJKC8E>L8>< 8J N<C
8J =FI : C@EKJ N@K? EF GI<M@LJ NFIB ?@KFIP 8E; =FI
8: LK< FI : ?IFE@: FE; @EJ 9LKN8J C8JKLJ<=LC=FI 8
: C@EKN@K? M@L8C, <Z: @J
, <JGFE; <EKJ I<GFIK<; K?8K K?< JL9K<JKJ F=K?< 1 -* #
N<I< LJ<; D FJK =I<HL<EKCP KF J: I<<E 8JJ<JJ : LII<EK NFIB
89@@P 8E; GIF; L: K@E JG<<; 8E; C8JK
=I<HL<EKCP =FI NFIB G8: <D <EK@ E<N 8C<IE8K@K AF9J
W< I<JLCKJ F=K?< 1 -* #N<I< LJ<; @ I<GFIKJ =FI @JLI8E: <
: FD G8E@J <D GCFP<IJ 8E; D <; @F C>8C
8JJF: @K<J
) ECP F=K?< I<JGFE; <EKJ N?F LJ<; K?< 1 -* #@
: C@@8CGI8: K@< =<CK?<P N<I< =8D @@I <EFL>? N@K? K?< 1 -*
#KF 8EJN<I J<: K@E F=K?< HL<JK@EE8@< , <JLCKJ =FI K?<J<
G8IK@@8EKJ 8I< GI<J<EK<; @ . 89C: # 9<CFN W< 8E8CPJ@F=
FG<E <E; <; HL<JK@EJ FE <8: ? JL9K<JK @, @8K<; K?<
8GGIFGI@K<E<JJ F=K?< JL9K<JKJ =FI K?< - FLK? =@8E : FEK<OK
8I< 8CJF I<GFIK<; @ . 89C: # 9<CFN . <E F=K?< JL9K<JKJ
N<I< LJ<; 9P D FI< K?8E F=K?< I<JGFE; <EKJ . 8JBJ =FI
: FD GI<?<EJ@E >I8; <; 8I@D <K@8E; 98J@8: : FLEK@> N<I<
LJ<; 9P K?< ?@?<JK G<I: <EK8>< F= I<JGFE; <EKJ

#( ) 2, " :) 9, 89 : 8, (4+ , ; (2 (9054

& " : 8, ( ) 0209= (4+ : 90209=

W< LJ<89@@P F=K?< 1 -* #@GI<J<EK<; @ . 89C: ## G8><
W< D 8AFI@P F= I<JGFE; <EKJ 8>I<<; K?< 1 -* # N8J
: FJK<Y<: K@K N8J J<EJ@@K KF : C@EKJ <; L: 8K@E8CC<M<C8E;
K?< @JKL: K@EJ N<I< <8JP =FI K?< : C@EKJ KF LE; <IJK8E; W<P
8CJF 8>I<<; K?< 1 -* # : FLC; <8J@P 9< @ FIGFI8K<; @KF
: C@@8CGI8: K@< N8J JL@89C KF K?<@ GI8: K@< : FEK<OK 8E;
JLGGFIK<; K?<@: C@@8CI<8JFE@> <N<I I<JGFE; <EKJ 8>I<<;
K?8K 8; D @@K8K@E K@< N8J 8GGIFGI@K< 8E; K?< 1 -* #
JLGGFIK<; K?<@ : C@@8C A; ><D <EK) ECP 8 K?@ F=
I<JGFE; <EKJ 8>I<<; K?8K K?< 1 -* # GIFM@<; JK8E; 8I;
J: FI<J =FI GI<MF: 8K@E8C 8E; MF: 8K@E8C JB@J 8E; N8J
J<EJ@@K KF K?< : C@EKJ C8E>L8><

#( ) 2, $8, ( ) 0Ø9= 5B/ , & "

LE; <IJKFF; 9P FK?<I J<IM@< GIFM@<IJ I<=<II@> G8IK@J JL:?
8J G8NP<IJ 8E; @JLI<IJ 8J N<C8J :G@EKJ 8G?FL>? DFJK
@, @8K<; K?@N8J EFK8E @JL< =FI FK?<I ?<8G? GIF=<JJ@E8J
8E; <DGCP<IJ .89C<#0 9<CFN

" $""
8K8 =FI K?< JK; P N<I< :FCC:K<; =FD 8 ?<K<IF><E<FLJ
>IFLG F= F::LG8K@E8C K?<I8G@KJ GIFM@@> MF:8K@E8C
I<?89@8K@E J<IM@<J K=:G@EKJ N@? ;@<I<EK:FE; @@EJ@8
M8I@K?P F=J<^@>J (<8IP?8G=F=K?<I<JGFE; <EKJ@K?@JK; P
:FLÇ 9< :FEJ@<I<; <OG<I@E:<; :G@@8EJ 8J K?<P ?8;
GFJK>I8; L8K< HL8@@8K@EJ 8E; ?8M< 9<<E GI8:K@@> @
MF:8K@E8CI<?89@8K@E =FI DFI< K?8E P<8IJ 8K8 :8E
K?<I<=FI< 9< 8JJLD<; KF I<[<:KK?< M@NJ F=F::LG8K@E8C
K?<I8G@KJ =8D@@I N@? K?< 1 -* #J:I<<E@> 8JJ<JJD<EK
' FJKI<JGFE; <EKJI<GFIK<; J<C:K@> JL9K<JKJ FE K?<1 -*
#K?8KN<I< 8C@E<; N@? @, @L8C:G@EKE<<; J JG<:KJ F=
><E<I8CNFIB JB@J JL:? 8J FE K8JB 9<?8M@LI HL8@@P F=NFIB
G<I=FID 8E:< NFIB I8K< 8E; <IIFIJ N<I< 8JJ<JJ<; FE 8CC
K8JBJ @ K?<1 -* #<O<GK=FI K?< GJP:?FJF:@C98^<IP
W<8; D@@K8K@EE F=K?<<EK@<J:I<<E@> 8JJ<JJD<EK8E;
JFD< JL9K<JKJ N<I< :FEJ@<I<; @8GGIFGI@K< @ K<IDJ F=
8; D@@K8K@EE K@<9P E<8IP?8G=F=K?<I<JGFE; <EKJ 8E;
DFJKP FEP FE< FI KNF K8JBJ N@?@ K?<JL9K<JKJ N<I<
8; D@@K<I<; @ 8E 8JJ<JJD<EK W< DFJK=<HL<EKP LJ<;
JL9K<JKJ N<I< LE:K@EE8C I<8; @> 8E; :FDGI<?<EJ@E
LE:K@EE8CD8K?<D8K@J FGN@> @JKL:K@EEJ 8E; ' FE<P
D8E8><D<EK W< K8JBJ =FI :FDGI<?<EJ@E >I8; <;
8I@?D<K@98J@8::FLEK@> LJ<F=8:8CLG8KFI 8E; =FGN@>
NI@<E @JKL:K@EEJ N<I< 8CCLJ<; 9P DFI< K?8E F=
I<JGFE; <EKJ W< GI<D@< =FI 8JJ<JJ@> ><E<I@FI ><E<I8C
NFIB LJ@> GI8:K@8CK8JBJ N?@? 8I< I<HL@<; @D8EP NFIB
J<^@>J N8J JLGGFIK<; J@<K?<J< K8JBJ 8G@E N@? B<P
><E<I8G FI ><E<I@NFIB JB@J F=8:HL@@> @=FID 8K@EEda FI

FI =FCFN@> ; @<: K@EJci ELD <I8: P : FEM<P@> @=FID 8K@Eda
8E; NI@<E : FD D LE@8K@Edb * FJ@M< =<<; 98: B FE K?< LJ< F=
K?<J< ><E<I@NFIB JB@J N8J 8CJF I<GFIK<; @ K<ID J F=K?<@
LJ< N@? J: ?FC8IJ 8E; JKL; <EKJ P<K KF <EK<I K?< NFIBG8: <
N?<I< 8; 8GK8K@E F=><E<I8CFI ><E<I@JB@J 8I< @ I<8J@>CP
I<HL@<; =FI : ?8E>@> AF9 I<HL@<D <EKJdb W< : FD GLK<I K8JBJ
N?@? 8C@E N@? K?< ><E<I@NFIB JB@C=FI 8GGC@8K@E F=
@=FID 8K@E K<: ?EFCF>Pdb N<I< LJ<; 9P =<N<I I<JGFE; <EKJ
GIF989CP 9<: 8LJ< K?< K8JBJ N<I< ; <M<CFG<; @ CK?FL>?
98J<; FE GIF>I8D D<J : FD D FECP LJ<; @ : FD GLK<IJ 8JG<: KJ
F=K?<J< K8JBJ E<<; KF 9< LG; 8K<;

) K?<I B<P ><E<I@ FI ><E<I8C NFIB JB@J JL: ? 8J
FI>8E@8K@E 8E; 8GGCP@> CF>@8C GIF: <JJ<Jda FI GIF9C<D
JFCM@>db : 8E 9< 8JJ<JJ<; LJ@> K?< 1 -* # " FN<M<I K?<
K8JBJ @ K?<J< JL9K<JKJ N<I< FECP LJ<; 9P 8 K?@ F=
I<JGFE; <EKJ FI C<JJ <M<E K?FL>? GFJ@M< : FD D <EKJ
@; @8K<; K?<@8GGIFGI@K<E<JJ =FI K?< - FLK? =@8E : FEK<OK
8E; ><E<I8CNFIB 89@P <JG<: @CP N@? D <EK8C?<8CK? : 8I<
LJ<IJ ' " / J , <JGFE; <EKJ I<GFIK<; LJ@> FK?<I FLK FD <
D <8JLI<J KF 8JJ<JJ K?<J< 8JG<: KJ 9LK; @ EFKJG<: @P N?@?
FE<J #E K?< * IF9C<D JFCM@> JL9K<JKK?< JF: @C8N8I<E<JJ K8JB
N8J D FI< =I<HL<EKCP LJ<; JLGGFIK@> K?< @ GFIK8E: < F=K?@
8JG<: K@ K?< NFIBG8: < =FI K?< ><E<I@NFIB JB@J FI NFIB@>
N@? FK?<IJ FI >IFLGda FI K<8D NFIBdb

W< ! <E<I8C : F>E@M< =LE: K@EJ 1 I@> 0@L8C
G<I: <GKL8C FFI; @8K@E 8E; ; <OK<I@P 8E; PE8D @GFJKLI<
JL9K<JKJ 8CC@ CL; < K8JBJ N?@? 8JJ<JJ NFIB JB@J I<C8K<; KF
@ G8@D <EKJ @ D <D FIP M@L8CGIF: <JJ@> 8E; ZE< 8E; >IFJJ
D FKFI 89@P . 8JBJ =FI M@L8C8E; 8L; @FIP =LE: K@E8CD <D FIP
8E; KF : FGP@> N<I< LJ<; 9P D FI< K?8E F=
I<JGFE; <EKJ N?@< K?< K8JBJ 8JJ<JJ@> >IFJJ 8E; ZE< D FKFI
G<I=FID 8E: < N<I< LJ<; 9P D FI< K?8E F=I<JGFE; <EKJ
W< LJ< F= K?<J< K8JBJ @ : FE>IL<EK N@? : C@EKJ N@?
E<LIFCF>@8C D <EK8C ?<8CK? 8E; LGG<I C@ 9 ; PJ=LE: K@E
N?@? I<JGFE; <EKJ I<GFIK<; K?<P 8JJ<JJ<; D FJK=I<HL<EKCP

- FD < K8JBJ JL: ? 8J NI@@> J8D GC<J : L^@> 8 JK<E: @
: FD GC<K@> 8 98EB; <GFJ@JC@8E; : FD GC<K@> 8 : ?<HL< N<I<
LJ<; 9P C<JJ K?8E F=I<JGFE; <EKJ 1 ?@< K?<J< K8JBJ D 8P
8CFN J: FI@> F= ><E<I8CNFIB JB@J JL: ? 8J 8: : LI8: P 8E;
<IIFIJ K?<PI<HL@<; <OK8 D 8K<I@CJ FI N<I< FLK; 8K<; 8E; ; @
EFKI<[<: K : LII<EK GI8: K@< @ K?< NFIB J@L8K@E 8E; K?<@
I<K<EK@E E<<; J KF 9< I<M@N<;

W< GJP: ?FJF: @C 98^<IP 8 J<C=I<GFIK J<K F=
HL<JK@EE8@<J N8J LJ<; 9P F=I<JGFE; <EKJ FI C<JJ W<
JK<JJ HL<JK@EE8@< N8J K?< D FJK LJ<=LC 8JJ<JJD <EK @
LE; <IJK8E; @> NFIB JK<JJFIJ =FCFN<; 9P K?< J<C=I<GFIK F=
K?< J@L8K@E 8K NFIB " FN<M<I @ N8J I<GFIK<; K?8K K?<
HL<JK@EE8@<J N<I< CFE> N@? JL9A<: K@M< I<JLCKJ K?8KE<<; KF
9< @K<IGI<K<; 8J JL: ?

1 ?@< K?< LK@P F=K?< 1 -* # @ I<C8K@E KF : FJK N8J
: FEJ@<I<; >FF; K?< G<I: <@M<; C8: B F=9<E<ZKJ @ GIFM@@>
JK8E; 8I; @<; J: FI<J N8J 8 : FE: <IE M<E K?FL>? K?< 1 -* #
@ 98J<; FE ') *. - JK8E; 8I; K@ <J =FI K?< K8JBJ N@?
8M<I8>< K@ <J @; @8K<; =FI <8: ? 8E; ; <K8@<; @JKL: K@EJ FE
K?< K8JB C8PFLKI<HL@<; FE K?< D 8KGIFM@<; EF @=FID 8K@E
89FLK K?< : F; <; ') *. - K@ <J N8J 8M8@89C< @ K?<
8JJ<JJD <EK D 8EL8C W< K@ <J : 8E K?LJ EFK 9< M8C@8K<; @
I<HL@<; ELD 9<I F=K?< K8JBJ FE K?< 1 -* #8I< EFKK@ <;

8E; 8JJ<JJ 89@P @ I<C8K@E KF <IIFIJ D 8; < W<I< @ EF
JK8E; 8I; @8K@E =FI K?< ELD 9<I F=<IIFIJ J: FI<; @; @8K@> K?<
E<<; =FI =LIK?<I I<J<8I: ? 8E; M8C@8K@E F=K?@8JG<: KF=K?<
1 -* #

W< 1 -* #N8J I<GFIK<; KF 9< LJ<89C< N@? 8: : <GK89C<
J<EJ@M@P KF : C@EKJ <; L: 8K@E8C C<M<CJ #K : FLC; 9<
@ FIGFI8K<; @KF : C@@8CGI8: K@< @ M8I@LJ J<^@>J @ - FLK?
=@8 @ CL; @> GI@8K< 8E; GL9C@J<: KFIJ 8E; J: ?FFCJ / EC@<
K?< LJ<89@P I<GFIK<; =FI K?< 1 * 8JJ<JJD <EK K?< 1 -* #
GIFM@<J K?< I<HL@<; D 8K<I@CJ @ K?< 8JJ<JJD <EK B@J@ <
K8JBJ 8I< JK8E; 8I; @<; 8E; K?<I8G@KJ ; F EFK E<<; JFLI: <
I<JFLI: <Jbn CFN@> [<O@@P @ K?< LJ< F=FE< FI D 8EP F=
K?< K8JBJ @ K?< 8JJ<JJD <EK8CJF D <8EKK?< 1 -* #JLGGFIK<;
K?<I8G@KJ : C@@8CI<8JFE@> FE K?< LE@L< E<<; J F= <8: ?
: C@EK <M<E @K?< C8: B F=JK8E; 8I; @<; J: FI<J <JG<: @CP =FI
89@P ; @ EFK FY<I 8J D L: ? JLGGFIK =FI K?<@ : C@@8C
A; ><D <EK W< @JL< N@? K?< 1 -* #EFK8: : FD D F; 8K@>
K?< : C@EKR ?FD < C8E>L8>< @ 8E FE>F@> : FE: <IEdc N?<E
J: I<<E@> 8E; JK8E; 8I; @<; 8JJ<JJD <EKJ 8I< LJ<; @ 8
D LCK@>L8C FLEKIP@< - FLK? =@8dd J@ C8I GIF9C<D N8J
I<GFIK<; @ K?< LK@P F=K?< 1 * =FI : C@EKJ N?FJ< ?FD <
C8E>L8>< N8J EFK - N<; @? K?< C8E>L8>< @ N?@? K?<
8JJ<JJD <EK@8; D @@K<I<; bn . I8EJC8K@E F=@JKL: K@EJ : FLC;
9< : FEJ@<I<; 9LK F= I<JGFE; <EKJ 8>I<<; K?8K K?<
@JKL: K@EJ @ K?< 1 -* #N<I< EFK : FD GC<O 8E; <8JP =FI
: C@EKJ KF LE; <IJK8E;

W< LK@P F=K?< 1 -* #N8J 8; <HL8K< =FI 8CC8JG<: KJ
<O <GK; @ I@ @8K@E F=D @ ; PJ=LE: K@E W @D 8P 9< ; L< KF
K?< C89<C@> F=K?< J: FI<J FE K?< 1 -* # W< ') *. -
JK8E; 8I; K@ < J: FI<J I<C8K< KF K?< 89@P F= K?< 8M<I8><
NFIB<I 8CK?FL>? K?@ @ @; @8K<; 8J 8E 9FM< 8M<I8>< =FI 8
J: FI< F= FE K?< &@<IKJ: 8C< FE K?< 1 -* # =FI K@ < 8E;
89@P J: FI< F= : FLC; 9< I<[<: K<; 8J M<I8>< KF 8C@E N@?
8E @K<IM<EK@E KF D 8@K8@ NFIB 89@P 8J @; @8K<; FE K?<
1 FIB 9@P #E; <Ode J: FI< F= FI M<I8>< @; @8K<J K?<
: C@EKD 8P K8B< KN@< 8J CFE> KF : FD GC<K< K?< K8JB W @J: FI<
J?FLC; @; @8K< <CFN 8M<I8>< 8E; 8C@E N@? JLGGFIKNFIB
89@P FE K?< 1 FIB 9@P #E; <Ode J: FI< F= J?FLC; @; @8K<
D @ @ G8@D <EK 8E; 8 J: FI< F= J?FLC; I<[<: K D F; <I8K<
@ G8@D <EK N?@? 8C@EJ N@? @ GIFM@> NFIB 89@P 8E;
I<JKFI@> NFIB89@P I<JG<: K@M<CP FE K?< 1 FIB 9@P #E; <O
J: FI< F= @8 J<M<I< @ G8@D <EKN?<I< K?< : C@EKJ : 8E K8B<
K@ <J CFE><I KF : FD GC<K< 8 K8JB 8E; D 8P 9< LE89C< KF 8: ?@M<
8EP NFIB JB@C

JK<E>K? F=K?< 1 -* # @ K?< : C@@8CLK@P N?@?
@=FID J FK?<I 8JJ<JJD <EKJ 8E; @K<IM<EK@E 8E; I<GFIK@> @
MF: 8K@E8CI<?89@8K@E W< J: FI@> JPJK<D 8CJF D <8EJ K?8K
K?< @ GC@8K@EJ F=K?< 1 -* #: 8E 9< LE; <IJKFF; 9P FK?<I
JK8B<?FC; <IJ 9LK : C8I@P 8E; J@ GC@ 8K@E F=K?< I<JLCKJ @
I<HL@<; =FI : C@EKJ 8E; FK?<I J<IM@< GIFM@<IJ

03 09(9054 8

W< J8D GC< F=I<JGFE; <EKJ N?F <M8CL8K<; K?< 1 -* #N8J
JD 8CC8E; I<JLCKJ D LJK9< M@N<; @ K?8KC@?K W< J: I<<E@>
8JJ<JJD <EK 8GG<8IJ KF 9< LJ<; 9P 8 C@ @<; ELD 9<I F=
K?<I8G@KJ @ GI8: K@< N@? 8 : FEJ@<I89C< M8I@K@E @ K?<
ELD 9<I F=K?<I8G@KJ LJ@> 8 C@ @<; ELD 9<I F=K?< JL9K<JKJ
8E; K8JBJ 8M8@89C< @ K?< 1 -* #98^<IP

W@ JKL; P ?8J ?@?@?K=; K?< E<<; =FI JFD< JL9K<JKJ 8E; K8JBJ FE K?< 1 -* ##KF 9< I<M@=; E<<; =FI 8; ; @@EJ KF K?< D 8EL8C@, @8K@> K?< ') *. - :F; @> =FI K8JBJ N?@? 8I< K@D<; 8E; =LIK?<I I<J<8I:? KF <JK89@D? M8C@@P 8E; I<@89@@P F=K?< 1 -* # 89@@P J:FI<J @I<:FD D<E; <; W< :@EK <D GCFP<IJ 8E; FK?<I JK8B<?FC;<IJ G<IJG<:K@K F= K?< @GC@8K@EJ F=K?< 1 -* #J:I<<E@> 8JJ<JJD<EKJ J?FLC; 8CJF 9< <JK89@D?<;

$"

' 8EP F=K?< JL9K<JKJ 8E; K8JBJ FE K?< 1 -* ##N<I< M@N<; 8J 8E 8GGIFG<@K< 8JJ<JJD<EK=FI J:I<<E@> ><E<I8CFI ><E<I@ NFIB JB@J @ I<@8K@E KF JG<:@ @ G8@D<EKJ @ K?< -FLK? ‡@8E :FEK<CK 1 -* ##J:I<<E@> 8JJ<JJD<EK8:FD D F; 8K<J ; @Y<I@> 89@@@J @ :@EKJ ; <G<E; @> FE K?< <; L:8K@E G<M<C 8E; ; @>EFJ@9LKD 8P LE; <I 8JJ<JJ ?@? ‡LE:K@E@> :@EKJ O<GK=FI :@EKJ ?FD< @8E>L8>< 8E; GIFM@@> JK8E; 8I; J:FI<J=FI ><E<I@NFIB JB@J K?< 1 -* #N8J:FEJ@<I<; KF ?8M<8; <HL8K< LJ<89@@P 8E; LK@@P=FI LJ< @:@@8CG8:K@< N@? 8 M8I<@KP F=:@EKJ 8J8 J:I<<E@> KFFC" FN<M<I I<J<8I:? =FI LG;8K@> JFD< JL9K<JKJ 8E; K8JBJ G8IK@L@8CP)I>8E@@> 8E; J<HL<E:@> 8E; ' FE<P D8E8><D<EK @ LI><EK@P I<HL@@<;

:9/57 5497Q):9548

<E@< I8EQJ<E 8E; *8K;<1 @:FE:<GKL8C@<; 8E; :8II@, FLK K?< I<J<8I:? .8M8E<J@! LI8P8? 8JJ@K<; N@? ;8K8 :FC@:K@E 8E; GFJ@@E F=I<J<8I:? ?@KFI@8C@P %<IIP ' 8>@C 8JJ@K<; N@? ;8K8 D8E8><D<EK8E; 8E8CPJ@

54A@*95-049,7,898

W<8LK?FIJ?8M<EF:FE[@KJF=@K<I<JKK<F;<:8I<

! ! "

,<GL9@F=-FLK? ‡@8 FDG<EJ8K@E=FI):LG8K@E8C#EAI@J 8E; @<8J<J D<E;D<EK @C 4B::<JJ<;):K 5?^GJ NNN>FMQ8;F:LD<EKJ:FDG<EJ8K@E F::LG8K@E8C@EAI@J 8E; ;@<8J<J 8D<E;D<EK9@C J<G

8JK<G<@E):LG8K@E8CNFIBK?<I8GPGI8:K@<@-FLK? ‡@8 1 FIB 4B::<JJ<; GI 5 S %<CP ' 8U<K< #,<EK@8K@E F=JB@J>8GJ8DFE>G<IJFEJN@? ;@89@@@J 8E; K?<@<D GCFPD<EKGIFJG<:KJ L9@ ,<GFIK (F ;F@?^GJ ;F@#I> JLJK8K LPJ. M8E @AFE" LE:K@E8C 8G8:@P<M8C8K@E E<JJ<EK@C :FDGFE<EKF=-FLK? ‡@8E F::LG8K@E8CK?<I8GPNFIBGI8:K@< J<IM@<J 1 FIB S D<I@8E):LG8K@E8CW<I8GP JJF:@K@E):LG8K@E8C K?<I8GPGI8:K@<‡8D<NFIB FD8@8E; GIF:<JJ K?<; D<I@8E $FLIE8CF=):LG8K@E8CW<I8GP -LGGC ;F@?^GJ ;F@#I> 8AFK - "8IDJ<- M8C8K@> M8C@@PF=') *.-8J8E8JJ<JJD<EK D<K?F; F=NFIBJG<<; @I<G8K@E KF K?<FG<E@89FLI D8IB<K ' 8JK<IJ; @D<I8K@E /E@MJ@PF=*I<KFI@ 4B::<JJ<;):K 5?^GJ I<GFJ@FIPLG8:Q8 9@DK<8D ?8E;G< "8IDJ<6 M8C8K@>6 G;=J<HL<E:<

&8?<I- F:BIF\ % LII<EK8E; ‡LKLI<K<E;J@GJP:?FC>@8C 8JJ<JJD<EK@-FLK? ‡@8 ?8CG<E><J 8E; FGGFIKLE@@J #E &8?<I- F:BIF\ %<; @FIJ *JP:?FC>@8C8JJ<JJD<EK@-FLK? ‡@8 ,<J<8I:? 8E; 8GG@@8K@EJ (<N 2FIB (2/ *I<JJ G S @@@@<F=):LG8K@E8CW<I8GP / E@MJ@P F=%N8 3LC (8K8C 1FIB 9@@P -:I<<E@> *IFZG< 1 -* 4B::<JJ<; G 5?^GJ NNNG;]G<I:FD AZG<I;<JB I<HL<JK*8J? << = ;; =;8 9 8< ;9 88 :; <= <:99<9 GIFA:K# <8 8=<8:;=8 : 8 < 1FIC; "<8K?)I>8E@8K@E #EK<IE8K@E8C :@JJ@8K@E F= ‡LE:K@E@> ;@89@@P 8E; ?<8K? ;F@?^GJ ;F@#I> $ M E -LG@8E 8I<P* 8II<C$"<P;<J') *.- &8E>L8>< F= 1FIB $FE<J9FIF , "<P;< PE8D@J*KP&@@K; "<P;< PE8D@J*KP&@@K; !G=M<I. 9<IJ FEJ@<I8K@EJ =FI <M8C8K@> LE@MKIJ8C J:I<<E@> 8JJ<JJD<EKJ $FLIE8C F= -:?FFC *JP:?FC>P S ;F@?^GJ ;F@#I> AAG @DIFJ<$ 8IE<J- IFNE "8JC:B -B@@J ;@>EFJK@J 8E; J:I<<E@> KFFCJ @@K8KLI< I<M@N 18IN@B #EJK@LK< =FI DGCFPD<EK,<J<8I:? <G8IKD<EK=FI 1FIB 8E; *<EJ@EJ 4B::<JJ<; -<GK 5?^GJ N8IN@B8:LB=8:JF:@J GL9@@8K@EJ 9@DIFJ<6<K68G6 6II<G G;= 898@GIF & 18GBKI 1FIBI<8;@<JJ@>I8;L8K<I<:IL@D<EK 8E; J<G:K@E I<M@N F=:LI<EK8JJ<JJD<EKD<K?F; J $FLIE8C F= .<8:?@> 8E; &<8IE@> =FI !I8;L8K< DGCFP89@@P S ;F@?^GJ ;F@#I> A@G< MFCEF8IK (<C& M8E ;<I 1<JK?LPQ<E /PJ %#EKF;L:@> 8J:?FFCKF NFIB K8EJ@@E DF;<C=FI PFLK? N@? ;@89@@@J @ -FLK? ‡@8 1FIB S -8E;HM@K$& .VIEHL@K% "<EI@JJFE ' JJ<JJD<EKF=NFIB G<I=FID8E:< 1* S;<M<CFGD<EK F= 8E @JKLD<EK 1FIB S "<8CP* $@E>$ IFFB<&.8PCI* 1FIB 9@@P#E;<O*IFDFK@E F= 1FIB 9@@P KFN8I;J *IF;L:K@K >@> S ;F@?^GJ ;F@#I> :? %8ICJFE &@9<I>!' -8E;HM@K$& #E@@C<M8C8K@E F= GJP:?FD<K@CGIFG<IK@J F=8JKL:KLI<; NFIBK8JB8GG@8K@E=FI K?< JJ<JJD<EK F= 1FIB *<I=FID8E:< @8 :FEJKL:K<; <EM@FED<EK @89@@P 8E; ,<?89@@8K@E S ;F@?^GJ ;F@#I> -D8IK DLK@@D<EJ@E8C DF;<C F= :@E@8C LK@@P #EK<IE8K@E8C$FLIE8C=FI +L8@@P@" <8K? 8I< S ;F@?^GJ ;F@#I> @K?: DQC 08E <E<I>.#$ Ç<IJ & ' <3N8IK " LI;FI= W< <Y<:KJ F=NFIBI<8K<; 8E; @,@L8C=8:KFIJ K?< NFIB 89@@P @,<O JPJK<D8K@I<M@N):LG8K@E8C8E; EM@FED<EK8C ' <;@@E< S ;F@?^GJ ;F@#I> F<D D<I@8E ;L:8K@E8C,<J<8I:? JJF:@K@E , D<I@8E *JP:?FC>@8C JJF:@K@E * (8K@E8C FLE:@ FE ' <8JLI<D<EK@ ;L:8K@E (' -K8E;8I;J=FI <;L:8K@E8C 8E; GJP:?FC>@8C<JK@>1 8J?@>KFE ?^GJ NNNK<JK@> JK8E; 8I; JE<KFG<E8:<JJZG<J?KDC

?8PKFI (-:?D @<I ; ><:FD 9<' W<<:FCF>@8CM8C@@P F=
E<LIFGJP:?FCF>@8CK<JKJ I<M@N F=K?<C@KI8KLI<FE
<M<IP, 8P:F>E@M<JB@J (<LIFGJP:?FCF>P, <M@N
S ; F@?^GJ ; F@FI>
(, 0 X
FJJLPK*' , <@JD 8 $ &@E<K%' FFEJ% <PFE;
@>EFJK@ ::LI8:P W< C@@8C/ K@@P F= @>EFJK@.<JKJ
C@@8C ?<D @KP S ; F@?^GJ ; F@FI>
:C@:?<D
8IK<^ $" @>@J %FK@$1) I>8E@8K@E8CI<J<8I:?
<K<ID @@> 8GGIFGI@K<J8D G<:J@<=FI JLIM<PI<J<8I:?
#E=FID 8K@E.<:?EFCF>P &<8IE@> 8E; *<I=FID 8E:<$FLIE8C
S
%?FB?8I $FI><EJ<E 1 8><IJ%' 8I@E %@<I - ' @@8IP
:LK< FE:LJJ@E M8CL8K@E , <GFIKFE C@@8C/ J89@@P
/ K@@P 8E; / J<I J*<I:<M<; FEZ; <E:< $FLIE8CF=
(<LIFKI8LD 8 S ; F@?^GJ ; F@FI>
E<L
*FC@ <:B W< FEK<EK08C@@P#E; <O I<2FL-LI<2FL
%EFN 1 ?8KJ <@>, <GFIK<; I@@L<8E; , <:FD D<E; 8K@EJ
, <J<8I:? @(LIJ@> " <8CK? S ; F@?^GJ
; F@FI> ELI
; ; @>KFE " 8CC$ -LIM<PI<J<8I:? D<K?F; J F=; 8K8:FC<:K@E
HL<JK@EE8@< ; <J@E 8E; G@FK@> #E ; ; @>KFE " 8CC $
IL<I8 " @>@JFE #$8E; *8PE<- <; @FIJ , <J<8I:?' <K?F; J
@*8C@@KM< 8I<) O=FI;) O=FI; / E@MIJ@P*I<JJ G S
; F@?^GJ ; F@FI> 8:GIF=FJF

08E; <I9@K / E@MIJ@P , <J<8I:? C<:KFE@ 8K8 8GKLI<
, 8G 48::<JJ<; ' 8I:? 5 ?^GJ
GIFA<:K<; :8GFI> JF\ N8I<
-@@>KFE *& -KL; <EKJ N@? I<8; @> 8E; NI@@> :?8C<E><J
/ J@> @=FID 8C 8JJ<JJD<EK KF 8JJ@K @ G8EE@> =FI K?<
K8EJ@@E KF 8; LCK C@< , <8; @> 8E; 1 I@@> +L8IK<IC?
S ; F@?^GJ ; F@FI>

8GG<C@*, F>FMJBP (-B@C <D 8E; J ?8E>@> 1 FIB
) I>8E@8K@E 8E; *<I=FID 8E:< +1 1 FIB@> *8G<IJ 1 *
*?@8; <C?@ 48::<JJ<; $8E 5?^GJ <I@<; >FM
@
' : LIIP (FK@EJ F=1 FIB I<8K<; -B@C8E; ! <E<I8C 9@@@J
W< ! <E<I@ -B@J <98K< 8E; K?< W< 1 ?FC<J:?FFC
JJ<JJD<EK F= ! <E<I@ -B@J F:KFI8C K?<J@ ' FE8J?
/ E@MIJ@P 48::<JJ<;) :K 5?^GJ 9I@><JD FE8J?
<; L 8IK@<J K?<J@(FK@EJ6F=61 FIB I<8K<; 6-B@6 8E; 6
! <E<I8C6 9@@@J6W<6! <E<I@6-B@J6 <98K<68E; 6K?<6
W<61 ?FC<J:?FFC6 JJ<JJD<EK6F=6! <E<I@6-B@J

*LD G?I<P $ -8K<I $ E 8JJ<JJD<EK F= ><E<I@ JB@J E<<; J
&FE; FE 48::<JJ<; (FM 5?^G ; <I8@<8: LB
- 6! <E<I@G; =
-?8Z<< ' 8: <ID @ $ 8IQ8; ' %8I98C8<@ JPJK<D 8K@
I<M@N 8E; D<K8 8E8CPJ@ F= *8K@EK, 8K<; 1 I@K 8E; " 8E;
M8CL8K@E *, 1 *, 1 " D<8JLI<D<EK GIFG<IK@J K8EJ8K@E
8E; FI :IFJJ:LCKLI8C8; 8GK8K@E @89@@P 8E; , <?89@@8K@E
FE@< ; F@?^GJ ; F@FI>
FIED 8E $, FD JB@ .FEJ@> %-<M@, 1 ?@<, 8IKFE " LCJ<P
' FIN8E<, ; 8GK@> 8E; K8EJ8K@> K?<D LC<E J:8C<J F=<8IC?
C<8IE@> =FI K?<-FLK? =@8E :FEK<CK-FLK? =@8E $FLIE8CF=
FD D LE@8K@E @FI; <IJ S ; F@?^GJ ; F@FI>
J8A; M @
#CD 8I@<E $ W<1 FIB 9@@P#E; <O 1 #) ::LG8K@E8C <; @@<
S ; F@?^GJ ; F@FI> F::D<; BHD