

# ***BRUNSWICK POLICE DEPARTMENT***

## ***PHYSICAL AGILITY TESTING PROCEDURES***

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### **RECOMMENDATIONS**

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#### **1. *PRESCREENING RECOMMENDATIONS***

It is strongly recommended that a medical clearance from a physician be required from the applicants prior to fitness screening. The medical clearance should be limited to a statement signed by a physician indicating that the elements of the fitness screening process have been reviewed and determined that it is safe for the applicant to participate in that process. This is all that is allowed under the Americans with Disabilities Act, unless a conditional offer of employment has been extended to the applicant.

#### **2. *PROTOCOLS***

Detailed protocols for administering each of the four fitness-screening standards are provided. Examiners should strictly adhere to these protocols.

#### **3. *WARM-UP AND COOL-DOWN***

Muscles and body systems must be warmed-up prior to exertion and sensibly cooled-down following the exertion. Examiners should assure that applicants are properly warmed-up and cooled-down when physical fitness screening tests are administered.

- ***WARM-UP***

The warm-up serves as a preparation for the actual screening session. In addition to preparing the body for the upcoming workout, it also helps to protect against unnecessary injuries and muscle soreness. The initial phase of the warm-up should take about 3 to 5 minutes and include activities such as walking or marching in place. After the general warm-up, a proper amount of time should be spent on stretching. See Appendix B for specific recommended stretching exercises. The stretching phase of the warm-up should take between 7 and 10 minutes.

- ***COOL-DOWN***

Abruptly stopping exercise when one has been vigorously, working out may trap all the blood in the muscles, which have suddenly stopped moving. Not enough blood circulates back to the brain or heart or other vital organs, and related symptoms result, i.e., dizziness, faintness, extra heartbeats, nausea, etc. The idea is to gradually bring the heart rate down. Utilizing a “slow jog/fast walk” format can do it. Following the gradual lowering of the heart rate it is important to stretch for a few minutes. Stretching after vigorous exercise helps to prevent muscle soreness and improve flexibility.

#### **4. STRETCHING**

The stretching phase of the warm-up should take between 5 and 10 minutes, depending on the temperature... longer when it is below 60°F.

There are 12 stretching exercises in Appendix B to enhance the range of motion in the joints as well as to focus on the major muscle groups that will be employed during the fitness screening. An effective method of stretching is to slowly stretch until the point of resistance is encountered, holding that position for 10 seconds, and then relaxing. It is important to remember not to bounce or stretch to the point of pain; this is counterproductive. Staying flexible is important since it can also improve athletic performance.

- ***STRETCHING EXERCISES***

- |                                 |                          |
|---------------------------------|--------------------------|
| 1. Hamstring Stretch            | 7. Quadriceps Stretch    |
| 2. Modified Hurdler             | 8. Runner's Stretch      |
| 3. Single Knee to Chest Stretch | 9. Calves Stretch        |
| 4. Double Knee to Chest Stretch | 10. Shoulder Stretch     |
| 5. Groin Stretch                | 11. Triceps Stretch      |
| 6. Inner Thigh Stretch          | 12. Foot Stretch (shins) |

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## **PROTOCOLS FOR FITNESS SCREENING ADMINISTRATION**

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Each event is administered at a separate station. All events are timed and each event will be administered once. Each event's score is placed on the applicant's scoring form.

### **INITIAL PROCESSING/WARM-UP STATION A**

<input type="checkbox"/> <i>Materials</i>	Applicant scoring forms, pencils, area large enough to conduct the warm-up routine appearing in Appendix B.
<input type="checkbox"/> <i>Procedures</i>	Make sure each applicant has a scoring form. Instruct applicants to fill in their name, the date, and all other information the form requests.  Explain testing procedure generally and in order of tests.  Move applicants to warm-up area (if not already there), and conduct warm-up exercises (See Stretching Exercises).  Following warm-up, send participants to each station.

## **TEST #1 ONE-MINUTE PUSH-UPS TEST**

### **STATION B**

Muscular endurance is defined as the ability to contract the muscle repeatedly over a period of time. Low levels of muscular endurance indicate inefficiency in movement and a low capacity to perform work.

This test indicates the muscular endurance of the upper body (anterior deltoid, pectoralis major and triceps).

<input type="checkbox"/> <i>Materials</i>	Stopwatch, scoring form, gym mat.  3-inch measuring device.
<input type="checkbox"/> <i>Procedures</i>	<p>Allow adequate time prior to the test for stretching and warm-up exercises.</p> <p><b>Instructions to applicants:</b></p> <p>“This screening standard measures the muscular endurance of the upper body. You are to perform as many push-ups in proper form as you can in one minute. This event will be administered once.”</p> <p>Demonstrate the correct technique. Females will <b>NOT</b> perform modified push-ups.</p> <p>The subject assumes the standard position for a push-up, which is the body rigid and the back straight. Toes are tucked under and the hands are approximately shoulder-width apart.</p> <p>The administrator places a 3-inch measuring device (or a partner’s closed fist) directly between and in line with the candidate’s hands on the floor (should be under the sternum) under the subject performing the push-up.</p> <p>The subject must keep the back and remainder of the body straight at all times. From this full extension, known as the up position, the subject will lower the body towards the floor until the sternum touches the device. The subject then pushes to the fully extended “up” position. This completes one repetition.</p> <p>The subject may rest in the up position only.</p> <p>The total number of correct push-ups is recorded as the score.</p>

**TEST #2 ONE MINUTE MAXIMUM NUMBER SIT-UPS**

**STATION C**

Muscular endurance is defined as the ability to contract the muscle, repeatedly, over a period of time. Low levels of muscular endurance indicate inefficiency in movement, and a low capacity to perform work.

This test indicates the muscular endurance of the abdominal muscle group, an area of important concern for the middle-aged subject.

<input type="checkbox"/> <i>Materials</i>	Stopwatch, scoring form.  Gym mat.
<input type="checkbox"/> <i>Procedures</i>	Allow adequate time prior to the test for stretching and warm-up exercises.  <b>Instructions to applicants:</b>  “This screening standard measures the endurance of the abdominal muscle group. You are to perform as many sit-ups in proper form as you can in one minute. This event will be administered once.”  <u>Demonstrate the correct technique:</u>  The applicant starts by lying on his/her back, knees are bent, heels are flat on the floor, and fingers are interlaced behind the head.  A partner or examiner holds the feet down firmly.  Heel should be close (12-18 inches) to the buttocks.  Sit-ups are started in the up position.  Applicants’ sit-ups are observed and counted aloud by a tester as each sit-up is completed. Only correct sit-ups are counted.  The applicant performs as many correct sit-ups as possible in one minute.  In the up position, the applicants should touch their elbows to the tops of their knees, or extend the elbows beyond the lower legs so that the upper body is completely upright. The applicant then returns to the down position or until the shoulder blades touch the floor.  Any resting should be done in the up position. If the applicant releases or unclasps fingers from the head, the tester stops the counting of sit-ups until the sit-ups are performed correctly.  Record the number of properly executed sit-ups.

## **TEST #3 1.5 MILE RUN**

### **STATION D**

This test requires a nearly exhaustive effort. It should also be stressed that individuals need not run to complete exhaustion when taking this test, but use some caution in how hard they will push themselves.

Equipment needed for this test are a stopwatch or clock with a sweep second hand, indoor or outdoor track, or another suitable running area measured to 1.5 miles, and testing forms to record time data.

<input type="checkbox"/> <i>Materials</i>	<p>Stopwatch or clock with a sweep second hand.</p> <p>An indoor or outdoor track, or another suitable running area measured to 1.5 miles.</p> <p>Traffic cones to mark start and finish lines.</p> <p>Scoring form.</p>
<input type="checkbox"/> <i>Procedures</i>	<p>Allow adequate time prior to the test for stretching and warm-up exercises.</p> <p><b>Instructions to applicants:</b></p> <p>“This screening standard measures your cardiorespiratory or aerobic endurance. You are asked to complete the 1.5 mile distance as quickly as you can. This test will be administered once.”</p> <p>Position applicants at the start line.</p> <p>Often subjects will attempt to run too fast early in the run. They will become fatigued too early. Explain this before the run and advise the applicants to pace themselves during the entire run.</p> <p>During the administration of this event, the participants should be informed of their lap times.</p> <p>At the finish, the timer will call out the time and the recorders will write down the time.</p> <p>Set stopwatch to zero and start test with the commands, “Ready, Set, Go.” Clock and record time to the nearest tenth of a second.</p> <p>Observe applicants during cool-down. Encourage applicants to walk around; discourage applicants from lying or sitting down.</p> <p>An important consideration at the end of the run is the “cool-down” period. The participants should be cautioned about standing around immediately after the run to prevent venous pooling of blood and buildup of lactic acid. This pooling of blood in the lower extremities reduces the return of blood to the heart, which prevents the removal of exercise related waste by-products. Instead, they should be instructed to walk for an additional five minutes or so in order to enhance venous return and aid in their recovery.</p>

# APPENDIX C

## APPLICANT PHYSICAL FITNESS STANDARDS

An applicant must score at the level provided in the following tables for each individual screening measure conducted. These norms only indicate the minimum required of an applicant to proceed in the Brunswick Police Department hiring process. These standards are based upon the 50<sup>th</sup> percentile as established by the Institute for Aerobics Research in Dallas, Texas. Those applicants who do not meet the minimum standard will be dismissed from the process and will need to reapply for subsequent job openings.

FITNESS TEST	MALE AGE				FEMALE AGE			
	20-29	30-39	40-49	50-59	20-29	30-39	40-49	50-59
One Minute Push-Up Test	33	27	21	15	26	21	15	13
One Minute Sit-Up Test	40	36	31	26	35	27	22	17
1.5 Mile Exercise	12:18	12:51	13:53	14:55	14:55	15:26	16:27	17:24
Sit and Reach Test	17.5"	15.5"	15.3"	14.5"	21"	20"	19"	18"
Body Composition	15.9%	19%	21.1%	22.7%	22.1%	23%	26.4%	30.1%

**Please Note:** The Sit & Reach Test and Body Composition are not required by M.C.J.A. standards. These tests will be given for statistical purposes only.

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# STRETCHING EXERCISES

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## ***HAMSTRING STRETCHES***

A group of three large muscles in the back of the thigh, the hamstrings are among your body's most important muscles since they act to straighten the hip, bend, and rotate the knee. Virtually every sport and physical activity makes use of these muscles, and consequently they are frequently subject to tightness and stress injuries.

In the stretching routines that follow, many of the exercises are shown for only one side of the body; for example, in the hamstring stretch shown, the left leg is stretched. When you do this, or any other exercise that stretches muscles on either the right or the left, be sure to repeat the exercise for the other side of the body.

- ***HAMSTRING STRETCH***

Lie on your back with your left foot on the floor and the other leg extended in the air. With both hands on either side, grab the ankle of the leg extended in the air and draw the leg towards you as far as you can.

- ***MODIFIED HURDLER***

Sit on the floor with one leg extended and the opposite knee bent. Keeping your back straight, lean forward slowly to grasp your toes. This will stretch your hamstrings, lower back and calf muscles.

## ***LOWER BACK STRETCHES***

The muscles and connective tissues of the lower back support your upper body. The lower back is frequently the site of muscle and connective tissue stress. Poor posture, of course, can exacerbate lower back pain. To relieve pain and reduce stress to the region, perform these exercises.

- ***SINGLE KNEE TO CHEST STRETCH***

Pull one knee to chest until a comfortable stretch is felt in the lower back and buttocks. Repeat with the opposite knee. Hold for 10 seconds. Repeat 2 times on each side.

- ***DOUBLE KNEE TO CHEST STRETCH***

Pull both knees to chest until a comfortable stretch is felt in the lower back. Keep back relaxed. Hold for 10 seconds. Repeat 2 times.

## **INNER THIGH STRETCHES**

The muscles of the inner thigh and groin area are called the abductors. Many people who regularly exercise ignore their inner thigh muscles, allowing them to become short and tight. These muscles can be easily injured; resulting in what are commonly called groin pulls. To reduce the chance of injury and to extend the range of motion in your legs, you should routinely stretch your inner thigh muscles with the exercises described below.

- ***GROIN STRETCH***

Extend both legs out and have both feet come together at the soles. Push your feet as close as you can into your groin area. Place each hand on your ankles. With your elbows placed on the inside of your thigh, try to stretch your thigh down until you feel a comfortable stretch. Hold for 10 seconds. Repeat 2 times.

- ***INNER THIGH STRETCH***

While lying on your back, extend your feet in the air and spread your legs as far apart as you can. Press down on your inner thigh with your arms. Draw one knee up and support it with your hand as you straighten your other leg, where you will feel a concentrated stretch.

## **QUADRICEPS AND HIP FLEXORS**

The quadriceps are four thigh muscles that begin on the hipbone and the thighbone and become united on a single tendon that is attached to the kneecap. These muscles work together primarily to straighten the knee. Tight quadriceps and hip flexors can limit your ability to run and jump. In addition, tight hip flexors can tilt your pelvis forward and lead to lordosis, or excessive curvature of the lower back.

- ***QUADRICEPS STRETCH***

While lying on your stomach, extend both legs. Flex your right leg up until your heel touches your rear. Hold the leg in this position with your right hand. Hold for 10 seconds. Repeat 2 times on each leg.

- ***RUNNER'S STRETCH***

With your hands on the floor for balance, extend your left foot behind you while keeping your right foot on the floor; lower your chest toward your right knee. This may be a difficult stretch if you do not have flexibility in your hip flexors.

## **CALVES**

Your calf muscle is composed of two distinct parts, the gastrocnemius and the soleus. The gastrocnemius is the large bulging muscle of the calf. It is connected to the Achilles tendon and is principally involved with lifting the heel off the ground and pushing off for walking, running, and jumping. The soleus extends underneath the gastrocnemius and connects to the Achilles tendon. Many people, especially those who run, have inflexible calf muscles. Tight calves can result in Achilles tendonitis, pronation, or inward roll of the foot, and plantar fasciitis, an inflammation of the connective tissue in the sole of the foot.

- ***CALF MUSCLE STRETCH***

Place your arms against a wall, drawing your left knee forward and extending your right leg behind. Keep your right knee locked and your heel on the ground to stretch the gastrocnemius. To stretch the soleus, flex your right knee slightly. Lean into the wall with both feet extended behind you, and both knees locked to stretch your left and right gastrocnemius muscles. Flex your knees slightly to include a soleus stretch in both legs.

## **UPPER BODY**

Stretching exercises for the upper body are important not only to protect you from muscle strain, but also to improve your posture and general appearance. Tight or weak chest and shoulder muscles, for instance, may result in rounded shoulders and bad posture.

- ***SHOULDER STRETCH***

Standing upright, bend your right arm behind your head, and press your right elbow downward with your left hand. Hold for 10 seconds. Repeat to the other side. Bend your left arm behind your head and press your left elbow downward with your right hand. Hold for 10 seconds.

- ***TRICEPS STRETCH***

Standing upright, swing your right arm leftward across your chest. To enhance a stretch of the right triceps and shoulder, place your arm in the bend of your left elbow and pull up with your left arm. Repeat to the other side.

## **FEET**

The foot is an amazingly complex structure that provides the strength to support your entire body. A well functioning foot routinely absorbs tremendous force. Walking, for instance, subjects the foot to a force of up to 120 percent of your body weight with each step. Running subjects the foot to even greater loads... up to five and a half times your body weight.

- ***FOOT STRETCH***

Lying down on the floor face up, pick up your foot off the floor and follow this sequence:

First, extend your toes as far as you can, feeling the stretch from your ankle to your toes along the top of your foot. Then turn your foot in to stretch the muscles along the outside of your foot. Pull your toes back toward your shin so that you feel tightness along the sole. Finally, turn out to lengthen the inside muscles.